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ENGLISH SUMMARY

The philosophy of continuous improvement in Lean management, Lean manufacturing, or Lean production, often referred to simply as Lean, requires employees' voices in the form of ideas and suggestions in problem-solving activities, which is the root of Lean production. Unfortunately, this is the area of Lean research that has received less focus. Therefore, this research addresses this gap by exploring the nature of employee voices and psychosocial barriers to mobilize employee voices in Lean production system.

Employee voice in Lean refers to direct employee participation in problem solving. The terms employee participation, employee involvement, employee empowerment, and employee voice are used interchangeably in voice literature (Marchington & Suter, 2013; Wilkinson & Dundon, 2010). Though Lean frequently uses the terms employee participation, employee involvement, and employee empowerment, it rarely used the term voice in the literature. Scholars in different fields have identified benefits to mobilize employee voice in organizations, bringing benefits to both the organization and the employees (Morrison, 2014). Employee voice at different level is a requirement for a successful implementation of Lean. Lean scholars locate the importance of employee participation (voice) in problem solving at the very heart of the Lean concept (e.g., MacDuffie, 1995; Shah and Ward, 2007; Womack et al., 1990).

Despite its importance, however, employee voice is not given due attention during the implementation of Lean. Lean practitioners focus on tool-based solutions, ignoring human dynamics, that is, employee participation and employee voice, which leads to the suboptimal performance or some cases failure of a Lean initiative. Recently, Lean research has shifted its focus toward human potential. Research on employee participation and employee voice is gaining popularity in academia. The voice scholars have identified that voice is not readily available due to barriers at both the organization and the individual employee levels. At the organizational level, contextual and situational factors always restrict employee voice, whereas at the individual level, idiosyncratic and demographic characteristics and individual-level beliefs influence employee voice in the workplace. Organizational behavior scholars have found that even in a positive organizational context, idiosyncratic and demographic characteristics lead some employees to remain silent at work. They recently found that some socially acquired beliefs on voice cause this workplace silence, and Detert and Edmondson (2011) termed these beliefs as implicit voice theories (IVTs). These IVTs explain why employees remain silent when they have potential information to share with supervisors or managers. Detert and Edmondson (2011) identified these IVTs in a sophisticated, high-tech organization with highly educated and skilled employees in an organizational-behavioral perspective. This is a new potential area of research, and no research has yet been carried out on employee

voice and its barriers in a labor-intensive assembly industry such as the readymade garment (RMG) industry, with employees with low level of formal education and skill, during the implementation of Lean. Therefore, this research aims to study employee voice behavior and its psychosocial barriers, represented by IVTs, in an operational management perspective during the implementation of Lean. We conducted this research with production-related employees at different levels of the RMG industry in Bangladesh. The aim of this research is to examine the following research questions:

(a) What is the content of employee voice regarding improvement of productivity and organizational health and safety in the readymade garment industry, and what are the challenges that employees experience in connection to implicit voice theories in raising their voice? (b) What are the influences of Lean team members' role definition and implicit voice theories on prosocial voice behavior during the implementation of Lean? (c) How can top management commitment influence Lean team members' prosocial voice behavior during the implementation of Lean?

This is a mixed-methods study dominated by a qualitative research methodology. Using intervention-based action research, we followed a case study research strategy to gain an in-depth understanding of employee voice and its barriers in Lean with the employees of the RMG industry in Bangladesh. This research is also based on established theory and concepts related to employee voice, so we mainly follow a deductive approach, analyzing the collected data using qualitative software for qualitative data and statistical software for quantitative data. The research focused on individual-level, team-level, and management-level perspectives of employee voice behavior and was comprised of three separate studies based on the above mentioned three research questions.

This research was conducted in the RMG factories in Bangladesh. RMG plays the key role in economic development in Bangladesh with employing 4.2 million employees of which 80% are women. Most of the workers in the RMG in Bangladesh do not have enough formal education and have limited skills. The RMG sector in Bangladesh lagging behind the productivity and OHS standards in comparing to other neighboring countries (Berg, Hedrich, Kempf, & Tochtermann, 2011; ILO, 2013b). To improve the productivity and competitiveness, the RMG industry in Bangladesh is introducing Lean manufacturing in their factories gradually. On the other hand, Bangladesh is a high hierarchical country with autocratic leadership style. With this particularities, Bangladesh become a suitable ground to conduct research on employee voice and its challenges in the RMG industry in Bangladesh. With this context, the findings of this research are summarized in the following.

Study I (identification of employee voice and its psychosocial barriers) focuses on the voice behavior of sewing workers of the RMG industry and the psychosocial barriers represented by the IVTs. The findings of this research revealed that the sewing workers in the RMG industry during Lean implementation generally raise a production-related problem-focused voice to their supervisors and line managers, yet they seldom raise a voice in relation to occupational and health and safety (OHS) issues, particularly when they feel discomfort that doing so may hamper production. Inspired by the IVTs of Detert and Edmondson (2011), this research identified that the influence of implicit voice beliefs on employee voice behavior vary with different contextual and situational practices, irrespective of these IVTs. The research found that due to target-based production, negotiated role, and Lean problem-solving initiatives, employees raise bottlenecks to the supervisors without fearing supervisor's target identification and without a solution to the problem or without the fear of negative career consequences. Confirming the findings of Detert and Edmondson, this research findings suggest that line workers do not usually bypass their supervisor upward and embarrass them in front of other managers. The research also found that workers in general honor and obey their supervisors and do not bypass or embarrass them.

Study II (Lean team prosocial voice barriers) focuses on the influence of role definition and IVTs of Lean team members and their influence on team members' prosocial voice behavior. Findings suggest that role definition in relation to employee voice influences employee voice behavior at the workplace irrespective of IVTs. In this research, Lean team leaders assigned two types of responsibility to the team members, namely, specific and general responsibility. The findings suggest that team members with specific responsibility contribute more to identifying, discussing, and solving bottlenecks, and team members with general responsibility usually opt to suggest solutions or improvements during discussions. The findings and its implications show that the team members with specific responsibility consider their voice as more in-role, whereas team members with general responsibility consider their voice behavior as more extra-role. The findings suggest that the team members are not restricted by the team leaders' target identification, but they are restricted by the proposal made by the team leader. Team members were found to not usually challenge or oppose any proposal raised by the team leader. In addition, the findings also suggest that, because the Lean team opted for problem-solving, the requirement that employees have "solid knowledge" before raising issues to the team leader or in the team meeting and the worry of "negative career consequences" are not barriers to speaking up. This is because team works together to solve problems via discussion. The IVTs of bypassing supervisor or embarrassing supervisor are thus found to be less relevant in teamwork.

Study III (top management commitment and Lean team voice) focuses on the influence of top management commitment on Lean team member prosocial voice behavior and team performance. Based on the available literature, the research identified six dimensions of top management commitment for this research and investigated how these dimensions influence team members' prosocial voice at the workplace. This research found that each dimension of top management commitment positively impacts prosocial voice behavior and that employee prosocial voice behavior contributes to improving productivity and OHS performance at the workplace.

Taken together, the findings of this research contributed to the voice literature in operation management, particularly in Lean manufacturing. Lean implementation requires employee voice in problem solving activities, and sharing a problem and discussing it to identify a solution is key to the problem-solving success of a Lean team. While shop-floor workers also need to share their problems to continue the production flow, little research has been carried out on employee voice in Lean manufacturing. The findings contributed to knowledge on the role of employee voice in Lean manufacturing by identifying the nature of the voice of RMG employees and the psychosocial barriers to the expression of employee voice, represented mainly by implicit voice beliefs. Identifying the influence of role definition and IVTs and management role on employee voice behavior, this research opens new avenues of research and introduces new perspectives on employee voice in operation management. The research findings of this dissertation can be used by practitioners to maximize the possible role of employee voice in successfully and sustainably implementing and running Lean manufacturing.

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DANSK RESUME

Lean management, Lean fremstilling eller Lean produktion, ofte blot benævnt som Lean, kræver medarbejdernes input (’voice’) i form af ideer og forslag til problemløsende aktiviteter. Medarbejdernes input er med andre ord forudsætningen for etableringen og udviklingen af en effektiv Lean-produktion. Desværre har netop dette område fået mindst fokus i inden for Lean-forskningen. Af denne grund fokuserer denne afhandling på denne mangel eller udeladelse ved at undersøge karakteren af medarbejder ’voice’ og psykosociale barrierer relateret til at mobilisere medarbejders input i Lean udviklingen af produktionssystemer.

Lean medarbejder ’voice’ i denne afhandling henviser til direkte medarbejderdeltagelse i problemløsnings aktiviteter. Udtrykkene medarbejderdeltagelse, medarbejderinddragelse, medarbejderindflydelse og medarbejder-stemme bruges i flæng i litteraturen (Marchington & Suter, 2013; Wilkinson & Dundon, 2010). Selvom Lean litteraturen ofte bruger udtrykkene medarbejderdeltagelse, medarbejderinddragelse og medarbejder-indflydelse, bruges ordet ’voice’ sjældent i litteraturen.

Forskere inden for forskellige områder har identificeret fordele ved at mobilisere medarbejdernes ’voice’ i organisationer og at deres input er til gavn for både organisationen og de ansatte selv (Morrison, 2014). Medarbejder ’voice’ kan anskues som en forudsætning for at en Lean implementering kan levere et positivt resultat Forskere inden for Lean fremhæver vigtigheden af medarbejderdeltagelse (’voice’) i problemløsning (f.eks. MacDuffie, 1995; Shah og Ward, 2007; Womack et al., 1990).

På trods af dens betydning har medarbejdernes ’voice’ dog ikke fået behørig opmærksomhed i relation til implementeringen af Lean. Lean-praktikere fokuserer på værktøjsbaserede løsninger og ignorerer typisk menneskelige dynamikker og reaktioner i forbindelse med en Lean implementering, dvs. medarbejderdeltagelse og medarbejder ’voice’, hvilket fører til en suboptimal implementering af Lean og i nogle tilfælde decideret fejlslagne Lean initiativer.

Lean forskningen har for nylig flyttet sit fokus mod menneskelige dynamikker og potentiale dvs. menneskets betydning i forbindelse med en succesfuld Lean implementering. Forskning om medarbejderdeltagelse og medarbejder-stemme vinder popularitet i den akademiske verden, og ’voice’-forskere har identificeret, at medarbejdernes ’input’ ikke er umiddelbart tilgængelig på grund af barrierer på både det organisatoriske og individuelle niveau. På det organisatoriske niveau påvirker

kontekstuelle og situationelle faktorer medarbejdernes inklination til at give deres besyv med om et problem, hvorimod det på individ er mere individuelle og demografiske egenskaber, som har indflydelse på medarbejdernes tilbøjelighed til at komme med input (’voice’) på arbejdspladsen. Organisations adfærdsforskere har erfaret, at selv i en positiv organisatorisk kontekst kan idiosynkratiske og demografiske egenskaber forårsage, at nogle medarbejdere forbliver tavse på arbejdet. De opdagede for nyligt, at de socialt erhvervede forestillinger om ’voice’ forårsager denne tavshed på arbejdspladsen, og Detert og Edmondson (2011) betegner disse overbevisninger som ’Implicit Voice Thoeries’ (IVT). Disse IVTer forklarer, hvorfor medarbejdere forbliver tavse, når de har værdifuld information at dele med deres overordnede eller andre ledere, Detert og Edmondson (2011) identificerede disse IVTer i en højteknologisk organisation med højtuddannede og kompetente medarbejdere. Dette er et nyt potentielt forskningsområde, og der er endnu ikke foretaget nogen undersøgelse af medarbejdernes ’voice’ og barriererne i en arbejdsintensiv samlebåndsindustri, såsom beklædningsindustrien med lavt kvalificerede og lavt uddannede ansatte under implementeringen af Lean. Derfor tager denne forskning sigte på at studere medarbejdernes ’voice’ adfærd og dens psykosociale barrierer, repræsenteret af IVTer, i et operationelt ledelsesperspektiv under implementeringen af Lean.

Undersøgelsen blev udført med fokus på produktionsrelaterede medarbejdere på forskellige niveauer i beklædningsindustrien i Bangladesh. Formålet med denne forskning er at undersøge følgende forskningsspørgsmål:

a) Hvad er indholdet af medarbejder ’voice’ i forhold til forbedring af produktivitet og organisatorisk sundhed og sikkerhed i beklædningsindustrien, og hvilke udfordringer oplever medarbejderne i forbindelse med IVT’er, i forhold til at bidrage med deres indsigter (’voice’)? (b) Hvordan påvirkninger Lean-team medlemmernes rolledefinition og IVTs deres prosociale ’voice’-adfærd under implementeringen af Lean? (c) Hvordan kan den øverste ledelses engagement have indflydelse på Lean-teammedlemmers prosociale ’voice’-adfærd under implementeringen af Lean?

Dette er en undersøgelse baseret på forskellige forskningsmetodikker dog domineret af en kvalitativ forskningsmetodologi. Ved hjælp af interventionsbaseret aktionsforskning fulgte vi en case-studie-forskningsstrategi for at sikre en dybdegående forståelse af medarbejdernes ’voice’ og relaterede barrierer i Lean i beklædningsindustrien i Bangladesh.

Forskningen er baseret på anerkendt teori og koncepter relateret til medarbejder 'voice', så vi benytter hovedsageligt en deduktiv tilgang, hvor de indsamlede data analyseres ved hjælp af kvalitativ software til kvalitative data og statistisk software til kvantitative data. Forskningen fokuser på individuelle niveau-, teamniveau- og ledelsesniveau-perspektiver af medarbejdernes voice-adfærd og er sammensat af tre forskellige undersøgelser baseret på de ovennævnte tre forskningsspørgsmål.

Mine undersøgelser er blevet udført i tøjfabrikkerne i Bangladesh. Beklædningsindustrien spiller en hovedrollen i den økonomiske udvikling i Bangladesh og har 4,5 millioner ansatte, hvoraf 80 % er kvinder. De fleste af arbejderne i beklædningsindustrien i Bangladesh har kun begrænset formel uddannelse og kvalifikationer. Beklædningssektoren i Bangladesh sakker bagud i forhold til produktivitet og OHS-standarder sammenlignet med nabolandene (Berg, Hedrich, Kempf, & Tochtermann, 2011; ILO, 2013b). For at forbedre produktiviteten og konkurrenceevnen indfører beklædningsindustrien i Bangladesh gradvis Lean produktion i deres fabrikker, hvilket potentielt set udfordres af at Bangladesh et højt hierarkisk, hvor lederne på fabrikkerne ofte praktiserer en autokratisk ledelsesstil. På grund af disse forhold er Bangladesh en velegnet case med henblik på forskning i medarbejder 'voice' og udfordringer i beklædningsindustrien i Bangladesh i forbindelse med en Lean implementering. Resultaterne af min forskning er sammenfattet i det følgende.

Undersøgelse I (identificering af medarbejder 'voice' og IVTer og deres indflydelse på Lean implementeringen) fokuserer på 'voice' adfærd hos syersker i beklædningsindustrien og de psykosociale barrierer, der er repræsenteret af IVTerne. Resultaterne af denne forskning afslørede, at syerskerne generelt bidrager med produktionsrelateret problemfokuseret 'voice' til deres værkførere og linjeledere, men alligevel bidrager de sjældent med 'voice' relateret til større forbedringer. Inspireret af IVTer fra Detert og Edmondson (2011) identificerede denne forskning, at indflydelsen af medarbejderne IVT'er varierer i forhold til forskellige kontekstuelle og situationelle praksiser. Undersøgelsen fandt, at på grund af målstyringen af produktionen, forhandlede medarbejder roller og Lean problemløsnings initiativer, italesætter medarbejderne flaskehalse over for værkførerne uden at frygte lederens målidentifikation og uden en løsning på problemet og uden frygt for negative karrierevirkninger. Resultaterne afslørede, at både tilsynsførere og samlebåndsarbejdere arbejder tæt sammen for at nå produktionsmålet, og at de overordnede derfor generelt ikke bliver irriteret, når medarbejderne giver udtryk for deres bekymring omkring problemer. Undersøgelsen bekræfter Detert og Edmondson resultater ifht at arbejderne normalt ikke går uden om deres værkfører og heller ikke ønsker at gøre dem forlegne foran deres ledere. Undersøgelsen fandt også, at

medarbejderne generelt respekterer og adlyder deres bosser og ikke underminerer eller ydmyger dem.

Undersøgelse II (indflydelse af medarbejdernes rolledefinitioner og IVT'er på teammedlemmers prosociale stemmeadfærd under en Lean implementering) fokuserer på indflydelsen af rolle-definition og IVT'er fra Lean teammedlemmer og deres indflydelse på teammedlemmers prosociale 'voice' adfærd. Resultaterne viser, at rolledefinitionen i forhold til medarbejderes 'voice' påvirker medarbejdernes 'voice' adfærd på arbejdspladsen uanset IVTer. I denne forskning tildelte Lean teamledere to typer ansvar til teammedlemmerne, nemlig specifikt og generelt ansvar. Resultaterne illustrerer, at teammedlemmer med specifikt ansvar bidrager mere til at identificere, diskutere og løse flaskehalse, og teammedlemmer med det generelle ansvar typisk vælger at foreslå løsninger eller forbedringer i diskussionerne. Resultaterne og konsekvenserne heraf viser, at teammedlemmer med specifikt ansvar betragter deres 'voice' som en "i-rollen"-'voice', mens teammedlemmer med det generelle ansvar betragter deres 'voice' adfærd som en "ekstra-rolle"-'voice'. Resultaterne viser, at teammedlemmerne ikke er begrænset af teamledernes mål-identifikation, men at de følte sig begrænsede af teamlederens fremsatte forslag. Det blev konstateret, at teammedlemmerne normalt ikke udfordrer eller modsætter sig forslag fremsat af teamlederen. Desuden antyder konklusionerne, at det ikke en forudsætning, at medarbejderne har "solid viden", før de rejser spørgsmål til teamlederen eller i teammødet, og bekymringen for "negative karriere-konsekvenser" er ikke en barriere. Dette skyldes, at teamet samarbejder om at løse problemer via diskussion. IVT'er i forhold til omgåelse eller ydmygelse af værkførere viser sig derfor mindre relevante i teamarbejdet.

Undersøgelse III (øverste ledelses forpligtelse til at påvirke prosocial 'voice' adfærd) fokuserer på indflydelsen af den øverste ledelses engagement over for Lean teammedlemmernes prosociale 'voice' adfærd og teampræstationer. Baseret på den tilgængelige litteratur identificerede forskningen seks dimensioner omhandlende den øverste ledelses engagement og undersøgte, hvordan disse dimensioner påvirker teammedlemmers prosociale 'voice' på arbejdspladsen i forbindelse med en Lean implementering. Denne undersøgelse fandt, at hver dimension af den øverste ledelses engagement har en positiv påvirkning på den prosociale 'voice' adfærd, og at medarbejdernes prosociale stemmeadfærd bidrager til at forbedre produktiviteten og OHS-ydelsen på arbejdspladsen.

Samlet set bidrog resultaterne af denne forskning til 'voice' litteraturen især i relation til Lean implementering. Lean implementering kræver medarbejderes input i problemløsende aktiviteter, og medarbejdernes inddragelse i problemidentifikation og -diskussion det er nøglen til succesfuld Lean implementering.

Medarbejdere på gulvet har også har brug for at dele deres problemer-identifikationer for at sikre at produktionen flow ikke forhindres; alligevel er der kun blevet undersøgt ganske lidt om medarbejdernes 'voice' i relation til Lean. Resultaterne bidrager til viden om den rolle, som medarbejder 'voice' spiller i forbindelse med Lean (implementering), ved at identificere karakteren af beklædningsmedarbejdernes 'voice' og de psykosociale barrierer der påvirker medarbejdernes 'voice'. Ved at identificere indflydelsen af rolleafgrænsning, IVT'er og ledelsesrollerne på medarbejdernes 'voice' adfærd åbner denne forskning op for nye forskningsveje og introducerer nye perspektiver på medarbejderes 'voice' inden for især operations management. Forskningsresultaterne fra denne afhandling kan bruges af praktikere til at forbedre den rolle som medarbejder 'voice' har i en vellykket og bæredygtig implementering og drift af Lean.

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Mohammad Abdul Latif
December 1, 2019
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CHAPTER 1. INTRODUCTION

1.1. INTRODUCTION

Lean implementation requires employee voice in problem-solving activities in the form of ideas, suggestions and opinions to realize its philosophy of continuous improvement, as employees' ideas and suggestions help managers make better decisions (MacDuffie, 1995; Shah & Ward, 2003). Lean management, Lean manufacturing, or Lean production, often referred to simply as Lean, is a systematic method of incremental improvement by eliminating waste from all areas of value chains (Shah & Ward, 2003). Lean teams require input from team members for problem solving, a result of which is that employee voice is necessary for continuous improvement that is at the heart of Lean production. In the voice literature, the term voice is often used interchangeably with employee participation or employee involvement without clear distinctions among a range of practices (Marchington & Suter, 2013; Wilkinson & Dundon, 2010), and voice is defined as employee participation in decision making and problem solving.

In the Lean literature, employee voice is yet to be discussed systematically or to be categorically defined. The terms employee participation, employee input, employee suggestions, and employee contribution to problem solving are well discussed in Lean, but employee voice is rarely mentioned in Lean literature. In a dynamic environment, employees at different levels confront problems as they engage in their daily activities, and these problems must be solved for activities to continue (Milliken et al., 2003). In manufacturing, for example, Lean is a dynamic activity in which employees frequently face bottlenecks that they need to share and solve immediately to keep production running. Therefore, employees in Lean must instantly communicate work-related issues to their supervisors and line managers. However, this human dimension is found to be ignored in most of the Lean program, resulting in suboptimal performance or failure in some cases (Gaiardelli, Resta, & Dotti, 2018). According to Veech (2004), the implementation of Lean often fails due to a lack of attention paid to the human element. Another area in which Lean faces criticism for its lack of attention is occupational health and safety (OHS) (Hamja, Maalouf, & Hasle, 2019b), and debate has centered on OHS in Lean implementation (Hasle et al., 2012),

Lean is blamed for intensifying work stress, yet it reduces other health injuries by introducing improved workstation design and by encouraging employee participation (Hasle, 2014; Hasle et al., 2012). Scholars identified employee participation as reducing employee health risk (Vredenburgh, 2002) and have therefore argued that individual-level employee voice and team voice are essential elements of successful Lean implementation (Kim et al., 2010; van Dun et al., 2017; van Dun and Wilderom, 2016; van Dun and Wilderom, 2012; Womack and Jones, 1994). Scholars have also

identified a positive association of employee voice with productivity and OHS performance (Paul & Macduffie, 1995; Tucker et al., 2008).

The study of employee voice in Lean is a recent phenomenon, yet it received much attention by both industrial relations and organizational behavior scholars long ago. In the industrial relations literature, voice is a tool of collective bargaining and individual grievance redress, as well as of organizational improvement (McCabe & Lewin, 1992). In the organizational behavior literature, employee voice is predominantly discretionary and seen as a feature of extra-role behavior (Botero & Van Dyne, 2009; Detert & Edmondson, 2011; Detert & Burris, 2007; Morrison, 2011; Morrison, 2014). In this perspective, voice is not negotiated and is not included in the formal job role, and not included in reward and punishment schemes (Morrison, 1994). This type of voice is dependent on the organizational context and individual-level characteristics.

In an operation management perspective, voice has different meanings and connotations. In manufacturing, employees, particularly shop-floor employees, face numerous minor problems as they engage in their day-to-day activities that require immediate action for production to continue. This suggests that the RMG workers must raise their work-related concerns to their supervisors during the implementation of implementing Lean. It is important to understand what types of issues they raise and challenges they face in order to realize better employee performance.

Lean scholars have recently acknowledged the importance of employee voice in successful and sustainable Lean implementation (van Dun & Wilderom, 2012). Lean requires both individual employee voice and team voice in problem-solving activities, and voice scholars as well as Lean scholars have found a positive association between individual employee voice and team voice with operational performance (Dundon et al., 2004) and OHS (Tucker et al., 2008). Lean concepts place importance on employee participation and wellbeing, including employee safety (Cardon, Engineering, & Bribiescas, 2015; Sugimori, Kusunoki, Cho, & Uchikawa, 1977). MacDuffie (1995) identified cognitive inputs as the root of Lean production. Employees in Lean display their cognitive inputs by raising their voice in problem solving activities and locating employee voice at the heart of the problem-solving activities of Lean manufacturing.

At the team level, team member input is important in problem solving. Womack et al. (1990) identified the team as the center point in Lean implementation, whereas van Dun and Wilderom (2012) found team voice to be crucial in identifying and solving problems and suggesting improvement during implementing Lean. According to Delbridge et al. (Rick Delbridge, Lowe, & Oliver, 2000), Lean teams constitute the most important mechanism of identifying and solving problems through their ability to mobilize employee voice. Due to the role responsibility related to employee voice, Lean teams and team members are expected to raise their concerns to identify and

solve bottlenecks and problems, and discuss in team (Kim et al., 2010; Mesmer-Magnus, 2009).

Voice scholars have identified benefits of employee voice for both organizations and employees. To gain the benefits, the expression of employee voice must be facilitated in the organization, and voice scholars have identified that management, including top management, can play vital role in in promoting employee voice (Detert & Trevino, 2010; Detert & Burris, 2007; Morrison, 2011). Detert and Burris (2007) found a positive association of employee voice with positive leadership behavior and managerial openness. Managerial leadership and openness toward employee voice help create a voice climate in the organization in which employees feel safe in speaking up. Managers can create a psychological safe workplace by ensuring organizational support and by encouraging a perception among employees that their input is evaluated and rewarded without risk of negative consequences (Detert & Treviño, 2010; Detert & Burris, 2007; Edmondson, 2003). Supervisors such as the first line manager are critical in creating such a psychological safe workplace. Leadership style, behavior, and actions can all develop positive shared beliefs about speaking up in teams (Detert & Treviño, 2010), thereby influencing employee voice behavior. Morrison and Milliken (2000) identified positive attitudes on the part of top managers toward employee voice behavior as creating a "trickle-down" impact in the organization that encourages employees to speak up.

Though employee voice is desirable for the organization, yet facilitating voice is challenging. Organizational behavior scholars have identified a variety of barriers to speaking up both at the organizational-level and the individual level context, and these barriers serve to restrict employee voice at workplace (Morrison, 2011). According to the organization behavior literature, the primary motive of raising a voice is to change the status quo of established processes, systems, or routines, and by nature this may be disadvantageous to the managers who are responsible for the process or routine (LePine and Van Dyne, 1998; Morrison and Milliken, 2000; Morrison, 2014). For this, managers may dissatisfy with the proposal of change or modify and may annoy with the employee who propose the change. Organizational behavior scholars have found that this often generates fear of speaking up among employees and restricts them from raising their voice at the workplace. Employee voice may also hurt or dissatisfy even coworkers and others when someone identifies his fault or mistake. Therefore, employees often feel reluctant to speak up and try to maintain a good relationship with those who control resources, rewards, and promotions (Milliken et al., 2003; Pinder and Harlos, 2001). Voice is also restricted by other organizational contexts, such as management practices and style, organizational structure, employee-management relations, and so on. (Morrison, 2011). Individual-level idiosyncratic characteristics and demographics (e.g., personality traits, attitude, sex, education, job role) also influence employee voice behavior (Detert & Burris, 2007; Morrison, 2011; Morrison, 2014). Recently, organizational behavior scholars have identified some socially held beliefs related to employee voice that negatively impact voice behavior.

Detert and Edmondson (2011) identified these voice beliefs and termed them as implicit voice theories (IVTs). They identified five such IVTs in a high-tech organization with a well-educated workforce. These taken for granted beliefs depict voice as a risky behavior that influences employee voice at work. Detert and Edmondson (2011) argued that due to IVTs, employees remain silent when they have potential information to share with managers or supervisors that may cause harm to the organization.

Despite the centrality of employee voice in Lean, little explicit research has been conducted on employee voice and its barriers in Lean. Recently, Lean has widened its focus from tools-based performance to the human dimensions of Lean manufacturing (van Dun et al., 2017; van Dun & Wilderom, 2016). One stream of research focuses on the influence of Lean implementation on employee wellbeing, whereas other focuses on the role of employee participation in successful Lean implementation. Findings suggests that misaligned or limited employee participation is a crucial barrier that often results suboptimal operational performance. Lean research is yet to exclusively focus on employee voice behavior during Lean implementation or on its barriers due to IVTs. Lean literature never focuses on team members' voice role perception and its influence on team members' voice and on IVTs. Moreover, Lean research has yet to address how top management influences Lean team members' voice behavior, including IVTs.

Therefore, the aim of this research is to address these research gaps and investigate the relationships among employee prosocial voice behavior, role perceptions, top management commitment, and identified the influence of IVTs at both the individual level and the team level during the implementation of Lean in a developing country context in the readymade garment (RMG) industry in Bangladesh. With these aims, the research questions are as follows:

a. What is the content of employee voice regarding improvement of productivity and occupational health and safety (OHS) in the readymade garment industry, and what are the challenges that employees experience in connection to implicit voice theories in raising their voice?

b. What are the influences of Lean team members' role definition and implicit voice theories on prosocial voice behavior during the implementation of Lean?

c. How can top management commitment influence Lean team members' prosocial voice behavior during the implementation of Lean?

We followed a mixed-method action research with a case-study research strategy to answer the above-mentioned questions. The mixed-methods approach is a suitable method that allows us to conduct in-depth interview and surveys simultaneously. We follow a partially integrated mixed-methods research, with qualitative methods dominating this research. We mainly collected qualitative data through in-depth interviews and observation, and quantitative data through a survey. We designed Lean and OHS interventions and implemented them in the lines of four purposefully selected garment factories.

1.2. THE BANGLADESHI READYMADE-GARMENT SECTOR

Bangladesh is developing country, with 160 million people in an area of 143,000 square kilometers, making it the most densely populated country in the world. Despite limited resources, Bangladesh is growing rapidly which has facilitated the rapid development of the RMG industry (Ahmed, 2004). The average annual GDP growth rate of Bangladesh has been more than 6% for last few decades and is expected to exceed 8% by 2019 (Mahmud, 2019). Bangladesh has already graduated from least-developed country status to that of developing country, which will be officially approved in 2024 by the United Nations, and it is expected to reach the middle income level by 2021 (ABD, 2019). The RMG sector has been placed at the center of Bangladesh's economic development.

Bangladesh is one of the key global players in the RMG sector, which has grown continuously since its beginning in 1970. Berg et al. (2011) listed an annual growth rate of 12% and stated that Bangladesh's RMG sector has become the key contributor to its GDP, which will continue for the next ten years due to advantages it provides in terms of price, capacity, capability, and trade regulations (Berg et al., 2011). The sector is the biggest foreign currency earner and the largest employer, boasting some 4.2 million workers, 80% of whom are women (ILO, 2015).

The RMG industry of Bangladesh has been characterized as a labor-intensive assembly industry comprising mainly rural women workers mostly with low levels of formal education and skill. These workers are usually submissive and loyal. The common practice of most companies is to recruit workers without any employment contract, despite the legal interdiction, with almost no prospect of promotion. They are thus vulnerable, because they may lose their job at any time without any prior notice. Similarly, RMG workers can also leave their job at any time without informing the management of the reason. However, this sector is lagging behind in terms of both productivity and OHS (Saha & Mazumder, 2015).

The productivity of the RMG industry in Bangladesh is one of the lowest in South Asia (Berg et al., 2011). Taking the productivity of China as a baseline, the productivity of Bangladesh RMG industry is about 70%, behind both of its neighboring competitors, India (92%) and Pakistan (88%; Berg et al., 2011). For

market competitiveness, this must be addressed. Similarly, according to a report by the International Labor Organization (ILO), the working conditions in the RMG industry of Bangladesh among the worst in the global garment industry (ILO, 2013a). Moreover, in 2013, this sector witnessed many workplace accidents, including the Rana Plaza disaster, which drew enormous international attention (Hossain & Arefin, 2015). In response, the International Apparel Brands, with the help of the Government of Bangladesh and the Association of Garment Factory Owners (BGMEA) began to implement sweeping reforms, including upgrading factories and improving working conditions. As part of this initiative, Aalborg University, with financial support from DANIDA and in collaboration with the Ahsanullah University of Science and Technology, in Bangladesh, undertook a research program with the aim of addressing both productivity and OHS. Thus, the Bangladeshi garment sector has been selected as a promising research area to contribute to the overall improvement of productivity and OHS performance.

The overall structure of this dissertation is presented in the following way. The dissertation bases on three studies addressing three research questions. The dissertation comprises of six chapter excluding the summary and acknowledgement. The first chapter include the introduction of the research that gives brief account of this research and the overall context of the research as described just. The second chapter discusses the theoretical insights of theories and concepts of all three studies including insights into employee voice and its importance in Lean implementation. This section synthesizes theories into processes. The third chapter provides the methodological overview of the research including three studies. The findings of three studies of this research are summarized in the fourth chapter. The fifth chapter include the discussion of the dissertation that draws the entire dissertation including the contributions and limitations of the research. The sixth chapter, the last chapter, encompasses the concluding statement of the research. All three studies are included at the end of the dissertation.

CHAPTER 2. THEORETICAL BACKGROUND

2.1. THEORETICAL BACKGROUND

The overall purpose of this research is to gain an in-depth understanding of individual employee as well as team members' prosocial voice behavior during the implementation of Lean, with the aim of improving productivity and OHS standards in the RMG industry in Bangladesh. With this objective, the aim of this theoretical section is to introduce the theoretical and conceptual model that justify this research with the subsequent papers concerning the underpinnings of employee voice at the workplace and its barriers.

2.1.1. EMPLOYEE VOICE

The term employee voice was first used in the context of the Industrial Revolution and goes back more than two hundred years to refer to an employee speaking up (Kaufman, 2014). Economic thinker Adam Smith (1776) introduced this term in his book *The Wealth of Nations*, stating that "The laborer ['s . . .] voice is little heard and less regarded [except] upon some particular occasion, which his clamor is animated" (Adam Smith, 1776 in Kaufman, 2014). Yet the concept of voice has drawn the attention of scholars since the publication of Hirschman (1970) seminal work, *Exit, Voice, and Loyalty*, in which he first coined voice as any effort to "change, rather than escape from, an objectionable state of affairs." Hirschman deserves the credit to develop the formal voice theory in relation to product markets. Later on credit goes on to Freeman and Medoff (1984) who bring the idea of employee voice in labor markets (Kaufman, 2014). The term voice is rather broad and is used in various academic fields, including political science, management, industrial relations, human resource management, psychology, and organizational behavior, and the meanings of the term overlap with for example participation, involvement, empowerment, engagement, collective bargaining, social dialogue, and industrial democracy (Gollan, Budd, Wilkinson, Gollan, & Wilkinson, 2010; Wilkinson, Gollan, Marchington, & Lewin, 2010).

The literature on voice suggests that voice is associated with positive organizational outcomes, including improved productivity and work processes, improved learning and innovation, and a reduction of error and illegal activities (Detert & Edmondson, 2011; Detert & Treviño, 2010; Hunt et al., 2012; Lepine & Dyne, 2001; Liang, Farh, & Farh, 2012; Tangirala & Ramanujam, 2008a). Voice scholars argue that voice benefits employees by improving their sense of control and expression of feelings, as well as by improving learning and skills (Morrison and Milliken, 2000). The primary

benefit of expressing employee voice is problem solving. At the individual level, the benefits may be that one's ideas might be well received, in response to which both formal and informal rewards might be the result (Detert & Burris, 2007). At the organizational level, employee voice improves the performance and productivity of organizations, organizational learning, and decision making and error correction (Detert & Burris, 2007; Dutton & Ashford, 1993; Morrison & Milliken, 2000). According to Morrison (2014), performance and employee morale may suffer if employees are unable to speak up in an organization. Employee voice also contributes to improving OHS practices among employees and in the organization (Tucker et al., 2008). Hofmann and Morgeson (1999) found positive effects of employee voice on injury prevention. According to Tucker et al. (2008), voice influences actions in the interest of safety, making a workplace safer in terms of its work situations and work processes and procedures. In a review of the Lean work environment, Hasle (2014) identified worker participation in Lean as the most important way to reduce negative effects on workers' health and safety as well as on working environment.

Voice research has gained momentum based on the Hirschman's (1970) exit-voice-loyalty framework and researchers placed importance on individual dissatisfaction and collective bargaining. Accordingly, industrial relations and human resource management scholars have taken the lead in voice research. In the former literature, employee voice has been understood in terms of the articulation of grievances and collective bargaining (Dundon et al., 2004) and participation in decision making process (McCabe & Lewin, 1992). Voice can be raised through trade unions, through indirect representation, or through direct employee participation (Dundon et al., 2004). Collective bargaining through trade unions and joint consultation via indirect representative participation has been declining gradually but the importance of direct employee participation through the sharing of information, concerns, and ideas regarding work-related problems and solutions or improvement have been gradually increasing over the period of time (McCabe & Lewin, 1992).

In organizational behavior literature, voice is mostly seen as discretionary and extra-role behavior and defined as the sharing of work-related information in the form of suggestions, concerns, opinions, or ideas from employees to the peers or managers in organizational hierarchies with the intention of improving organizational performance (Detert & Trevino, 2010; Detert & Burris, 2007; LePine & Van Dyne, 1998; Morrison, 2011; Morrison, 2014; Linn Van Dyne et al., 2003). According to Van Dyne et al. (2003) voice in organizational behavioral literature is constructive and prosocial, but challenging, and aims to benefit the organization. The motive of speaking up comes from the desire to help the organization (Morrison, 2014; Linn Van Dyne et al., 2003). Van Dyne et al. (2003) argued that this improvement-oriented voice is prosocial in nature, where the prosocial voice is defined as challenging but promotive, proactive, and other-oriented behavior that focuses on improving the existing situation. According to Detert and Burris (2007), voice is inherently change-oriented, as it seeks to modify how things work or perform. Voice is challenging, as it intends to change

or modify the status quo of existing practices, processes, policies, or strategic directions; it is promotive because it is constructive in nature and it is also proactive behavior in that it aims to improve the prevailing situation (Grant & Ashford, 2008; LePine & Van Dyne, 1998).

Scholars in the field of organizational behavior have suggested that not all prosocial voice behavior challenges the status quo, but rather can support it by means of small corrections and might be well-received by the supervisor. For example, Burris et al. (2012) identified that prosocial voice increases the opportunity of higher evaluation by manager. Individual employees working on a line in a manufacturing unit may support a manufacturing process or method by identifying, sharing, and solving problems or discomforts with the supervisor immediately when they experience problems or discomfort, allowing the process or method to continue more efficiently. Burris et al. (2012) argued that supportive speaking up in connection to existing policies, practices, routines, and processes can help improve organizational performance (Burris et al., 2012). Relatedly, individual employee in manufacturing experiences different types of work-related problems in their daily activities that must be addressed immediately to continue production flow and to achieve the production target; otherwise, the production flow will be discontinued, and the line operators will not receive their target bonus. This type of voice is mainly informal in nature, as it is raised immediately after experiencing problems or discomfort or after identifying options for improvement, and this voice aims to solve problems and improve the situation. According to Burris et al.(2012) this voice aims for the incremental improvement of the processes or routines under the continuous improvement program of the organization.

From an operation management perspective, employee voice tends to be a requirement to identify and solve bottlenecks in running operations, because in operation management, for example, in Lean manufacturing, voice is improvement-oriented and supportive. Because Lean is based on the philosophy of continuous improvement, Lean employees must immediately identify, share, and discuss waste and bottlenecks in their daily routines to solve them immediately and continue production. Therefore, employee voice in operation management is presumed to be in-role and informal in nature, as employees, specially, shop floor employees must raise their voice to their supervisors immediately after identifying problems so as to solve them and smoothly perform their daily tasks. However, scholars within operations management have paid little attention to the voice research in Lean.

2.1.2. LEAN MANUFACTURING AND EMPLOYEE VOICE

The Lean concept is inspired by the Japanese Toyota Production System, and the term was coined by Krafcik (1988) in his article “Triumph of the Lean Production System.” The concept was popularized after the publication of “The Machine that Changed the World,” by Womack et al. (1990). Lean scholars have defined Lean variously, aiming

to reflect its philosophy, goal, and scope. Accordingly, Lean is commonly defined as a philosophy (Liker & Meier, 2006), a way of life (Storch & Lim, 1999), a set of practices (Simpson & Power, 2005), or a set of tools among other definitions (Shah & Ward, 2003). Reviewing the Lean literature, Shan and Ward (2007) define Lean as "an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimizing supplier, customer and internal variability." In general, Lean is a complex set of management practices that aim to improve productivity and quality continuously with just-in-time delivery by eliminating waste across the organization, which is achieved by involving and empowering employees (Shah and Ward, 2007; van Dun and Wilderom, 2012; Wickramasinghe and Wickramasinghe, 2012). In this study, we emphasize employee participation in the implementation of Lean.

The reason we chose to investigate employee voice in Lean must be explained before the research is presented. Practitioners and scholars in operation management have identified Lean as a widespread method in manufacturing systems, offering competitive advantage to an organization by improving its operational performance and OHS (Longoni, Pagell, Johnston, & Veltri, 2013). Empirical findings have suggested that Lean improves multiple dimensions of performance, including productivity and quality (e.g. Shah and Ward, 2003). The Lean philosophy addresses employee wellbeing and safety (Cardon et al., 2015). Proponents of Lean have identified huge benefits of Lean for both the organizations and the employees (Morrison, 2014). Opponents of Lean, however, have identified that Lean intensifies workloads and work stress and exacerbates other health risks (Hamja, Maalouf, & Hasle, 2019a). A third group of scholars have identified that Lean work stress and other health risks could be minimized if Lean follows the original Lean philosophy and involves employees in its design and implementation. According to Hasle (2014), the debate of empowering employees on the one hand and impairing workers' health on the other hand makes Lean a contested concept, and it has been argued that the negative impact of Lean for changing work practices can be improved by involving employees in Lean change processes (Hasle, 2014; Psychology and Do, 1999; Puvanasvaran et al., 2008; Womack and Jones, 2003). Therefore, we chose employee participation in Lean to reduce workers stress and health risk as well as improve the operational performance of the organization.

Production workers and their cognitive inputs are central to problem solving activities in Lean (MacDuffie, 1995), and research has found that the human factors including employee voice play a key role in implementing Lean in a successful and sustainable way. In the original Lean concept, not only workers were allowed to display their capabilities, but their safety issues were also taken into consideration. Womack and Jones (2003) mentioned waste elimination and creative thinking as two Lean concepts in their book, *Lean Thinking*. The "continuous improvement" philosophy of Lean is linked to the creative thinking of workers in identifying and solving problems and

suggesting improvements (Womack and Jones, 2003 in Arezes, Dinis-Carvalho, and Carvalho Alves, 2015).

Lean scholars have identified that Lean eliminates wastes by implementing situation specific tools, such as Kaizen, quality circles, Ghemba walks, 5S, and others (Wickramasinghe and Wickramasinghe, 2012; Worley and Doolen, 2006), and improves performance and productivity by maximizing employees' potential. Acknowledging the importance of employee participation, recently, Lean has begun to shift its focus away from a tools-performance approach to the human components of Lean manufacturing (van Dun et al., 2017; van Dun and Wilderom, 2016). One stream of Lean research focuses on the tools and techniques and unpacks the importance of a systematic implementation of these tools for better performance, and it investigates the impact of Lean on employee wellbeing, finding a link between Lean and employee wellbeing (Cullinane, Bosak, Flood, & Demerouti, 2012). Another stream of research placed importance on employee participation for successful Lean implementation. Research suggests that limited or misguided employee participation does not bring benefit, instead creating barriers such as lack of ability to implement Lean and resulting in suboptimal operational performance. The foundation of this research stream is to emphasize the core principles of continuous improvement and respect for people (Cardon et al., 2015; Emiliani, 2006; Sim, Curatola, & Banerjee, 2015; Sugimori, Kusunoki, Cho, & Uchikawa, 2017). Continuous improvement is carried out by constantly eliminating waste, and respect for humans is ensured by allowing employees to display their capabilities by involving them in the design and improvement of their own work (Cardon et al., 2015; Emiliani, 2006; Sugimori et al., 2017). A Lean work system thus requires a multi-skilled workforce with additional responsibilities and autonomy and with work-related knowledge and capabilities to identify and solve problems, which is central to continuous improvement (Forza, 1996; Fullerton & Wempe, 2009; González-benito & González-benito, 2006; Wickramasinghe, 2012).

Regardless of the centrality of employee participation in Lean production, employee voice is less addressed in Lean research. Throughout the long history of Lean, the principle of respecting people has been ignored and unrecognized by management outside Toyota, which limits the effectiveness of Lean implementation (Emiliani, 2006) and leads, in many cases, to failure. Van Dun and Wilderom (2012) underscored the need to pay attention to employee voice behavior, adding that this particular type of employee behavior is crucial to study but has not yet received attention by Lean researchers.

2.1.3. LEAN TEAM AND EMPLOYEE VOICE

Teams play a central role in successful Lean implementation (Womack et al., 1990). Lean teams are characterized as a group of multifunctional workers with higher responsibility and autonomy contributing to improving operational performance by

forwarding suggestions and identifying and solving problems, in teams or individually (Wickens, 1987 in Delbridge et al., 2000). According to Macduffie (1995), teams are included in organizations with Lean production in which employee participation has been given due importance. By forming different types of work teams such as quality circles, problem solving teams, quality improvement teams, Kaizen teams, and employee suggestion systems, Lean facilitates a direct form of employee voice in problem-solving (Pil & Macduffie, 1996). In Lean, employees and team members are assigned some specific responsibilities to identify and eliminate waste from processes. Lean workers thus raise voice to work-related issues to be solved by the team. For both individual-level and team-level voice, the content and message of voice is extremely important to the supervisor, and the message within the voice indicates the importance of the issue raised by the employee and guides supervisors and line managers in their subsequent actions.

2.1.4. VOICE TYPE AND VOICE CONTENT

The content of messages that employees convey to their supervisors through their voice is considered critical to supervisors in the hierarchy. Individual employees can voice a wide range of organizational issues to their managers, including personal grievances, complaints about other co-workers or supervisors, or challenges to the work processes or other features, or support improvement initiatives through feeding ideas and suggestions. This research focus on the prosocial voice that support the status quo of work system through incremental improvement initiatives aims to improve the organization.

Morrison (2011) identified three types of voice messages that an employee can deliver to the supervisor or manager in the organization; these include a problem-focused voice, a suggestion-focused voice, and an opinion-focused voice. A problem-focused voice is defined as the employees' work-related and problem-oriented concerns regarding factors that may hamper the organization. Morrison (2011) defined a suggestion-focused voice as one forwarding suggestions or ideas to improve the work unit and the organization. Finally, an opinion-focused voice reflects the employees' view on work-related issues that differ from the other views. Differentiating between three voice categories (i.e., identifying problems, providing solutions to problems, and providing opinions), Morrison (2011) suggested that providing solutions to a problem is perceived as less dangerous than speaking up without being able to provide solutions or with opinions only. In Lean production, at the root of continuous improvement is identifying and solving problems and bottlenecks, without which no improvement can be initiated. As a result, the Lean employees must voice ideas, suggestions, and opinions.

2.1.5. ROLE PERCEPTION AND EMPLOYEE VOICE IN LEAN

Another less researched area of employee voice is in relation to role perception. According to Morrison (1994), role perceptions play a significant role in deciding the behavior of employees and what constitutes in-role versus extra-role behavior. Both social information processing theory (Salancik & Pfeffer, 1978) and psychological contract theory (Robinson & Morrison, 1995) suggest that employee roles are not fixed but vary from employee to employee and depend on the formal and informal structure of the organization. According to Morrison (1994), this role perception is important in assessing whether an employee engages in voice behavior as part of their job or as an extra effort, though it is difficult to draw a clear boundary line between in-role and extra-role behavior (Morrison, 1994). The role boundary varies based on how broadly or narrowly employees perceive or define their job breadth (Graen, 1976 in Morrison, 1994), how they interpret their employment obligation (Rousseau, 1989), how supervisors perceive employees' job breadth, and how supervisors and individual employees negotiate their roles. When an employee defines an activity as in-role, they perform this activity more than when they take it as an extra role. When employees view voice as the core aspect of their job, they consider voice as their in-role responsibility, and when they treat voice as beyond their call of duty, then it is extra-role behavior (Linn Van Dyne, Kamdar, & Joireman, 2008). When employees treat a particular behavior as in-role, it occurs more frequently than when the same behavior is taken as extra-role (Coyle-Shapiro & Kessler, 2002; Morrison, 1994). Management also has a stake in defining role perception among employees by demonstrating their actions and behavior. For example, when management encourages speak up by initiating some form of incentives, and practices decision making by discussing with floor level employees, the employees perceive a safety climate and share more information with their supervisors.

2.1.6. MANAGEMENT AND EMPLOYEE VOICE IN LEAN

Management has a critical role in promoting employee voice in the organization, as managers have the authority and power to address employee voice (Morrison, 2014). Voice scholars in organizational behavior have identified the central role of management in creating a psychologically safe workplace for employee voice by their behavior and actions (Detert & Burris, 2007; Edmondson, 1999). According to Detert and Burris (2007), the perceived openness of managers fosters employee voice by extending the feelings of psychological safety to speaking up. Psychological safety is defined as perceptions of employee about the safety of speaking up (Detert & Burris, 2007). According to Morrison and Milliken (Morrison & Milliken, 2000), employee voice behavior depends on how managers react. Employee voice means sharing ideas and suggestions with someone with the authority perceived as necessary to address them (Morrison, 2014). Managers are also crucial in that they have the authority to reward and punish subordinates for their activities and performance. According to (Ashford, Rothbard, Piderit, & Dutton, 1998), managerial endorsement of the

suggested change, as well as the perceived safety of exercising voice, encourage employees to raise their voice. The authority to allocate resources and to administer employment and the associated actions of managers play a critical role in influencing employees' voice perceptions and behavior (Detert and Burris, 2007; Detert and Trevino, 2010).

Research on employee voice identified two types of leadership influence on employee voice (Detert & Treviño, 2010): direct leadership influence, represented by the supervisor's influence on the employee, and skip-level leadership influence, represented by the influence of managers at levels above the supervisor on the employee. The formal relationship and frequent interactions between employee and immediate supervisor create the employee's perception about supervisor's attitude towards employee voice. Edmondson (1999) found that when employees find their supervisor accessible and when the latter encourages their input, employees believe that speaking up is safe. According to Detert and Trevino (2010), top management influences employee voice indirectly, because they usually do not have any direct interaction with the employees but are understood through their policies, practices, and directions, which lead to a climate in which speaking up either is or is not encouraged. Top management can influence employee behavior by being involved in any program, by communicating their vision and mission, and by supporting employees' actions. According to Detert and Trevino (2010), top management plays a critical role in creating voice perception among employees through their behavior and actions (Detert & Trevino, 2010). Morrison and Milliken (2000) identified the senior management as helping create a climate of speaking up by their strategic directions, which trickle down up to the bottom of the organization.

2.1.7. BARRIERS TO EMPLOYEE VOICE

Barriers to employee voice diminish the probability that employees will speak up, thus leading to silence (Morrison, 2014). Employee voice is not always readily available but is often stifled or restricted by employees themselves or by the prevailing situation or existing practices of the organization. Scholars in voice literature have identified numerous barriers to employee voice, which can be presented into two broad categories: at the organizational level and at the individual level. These two types of voice behavior are introduced in the following sections. Inspired by the model of Morrison (2011), the barriers to employee voice are presented in the following figure for empirical findings and analysis.

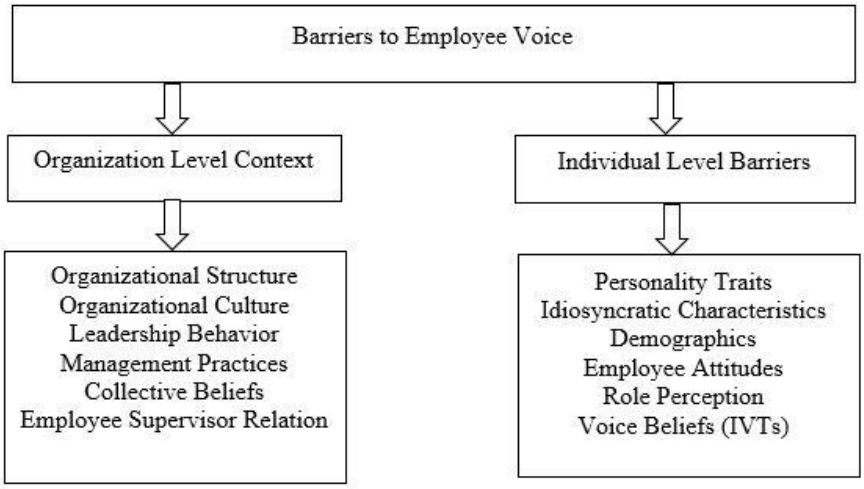

Figure 1 Employee Voice Barrier

Organizational context, for example, organizational structure, organizational practices, leadership style and behavior, managerial and supervisors' openness, collective beliefs, employee–supervisor relations, and other factors influences employee voice behavior at the workplace. Organizational bureaucracy stifles employee voice. Employees feel hesitant to raise issues with the managers of higher status (Athanassiades, 1973 in Morrison, 2011). Scholars argue that hierarchical differences cause employees to believe that their voice may not receive an appropriate response and that they may face consequences (Morrison and Milliken, 2000; Pinder and Harlos, 2001). Scholars found that leadership style and attitude towards voice influences employee voice behavior at workplace (Detert & Trevino, 2010; Detert & Burris, 2007; Liang et al., 2012). Organizational leaders control resources and administer subordinates through recruitment, dismissal, payment, and promotion, which affects employee behavior (French and Raven, 1959; Depret and Fiske, 1993 in Detert and Burris, 2007). Group and organizational climate both have a significant influence on employee voice (Ashford et al., 1998; Edmondson, 1999; LePine & Van Dyne, 1998). Dutton and Ashford (1993) found that issue selling is conservative when top management is unsupportive and non-favorable to issue selling. Issue selling refers to an attempt of any employee to attract the attention of their managers by raising an issue that might have implication for organizational performance (Dutton & Ashford, 1993).

Research findings suggest that managers and supervisors play critical role in creating or impeding a climate conducive to the expression of voice (Detert and Burris, 2007; Detert and Trevino, 2010). Scholars have identified managerial openness as vital for employee voice, where openness is understood to reflect the perception of managers and their interest in employee voice (Detert & Burris, 2007). According to Detert and

Burris (2007), managerial openness to employee voice help create a positive climate and psychologically safe environment to employee voice. Organizational culture also impacts employee voice behavior at workplace. When organizations are less bureaucratic, then employees feel comfortable speaking up, whereas environments perceived to be less supportive create barriers to employees in speaking up.

At the individual level, voice is restricted due to the belief that voice is a risky behavior that may bring about undesirable outcomes, for example, damage to reputation, decreased self-esteem, negative career consequences, or negative evaluation (Ashford et al., 1998; Kish-Gephart et al., 2009; Morrison and Milliken, 2000). Individual factors, including personality traits and idiosyncratic views, also influence voice behavior at workplace. Researchers have found that duty-oriented and assertive employees with a proactive personality raise their voice more frequently than those who are achievement-oriented (Hunt et al., 2012; LePine, A. & Van Dyne, 2001; Tangirala, Kamdar, Venkataramani, & Parke, 2013). Duty-oriented employees are more conscious of their responsibility and raise their voice more often, as do assertive individuals, who feel free to speak up. Employee with high neuroticism and agreeableness, by contrast, tend speak less because, respectively, they feel nervous to speak up or prefer to accommodate the status quo (Avery, 2003; Judge, Heller, & Mount, 2002; Judge & Bono, 2000). Finally, role perception also influences employee voice: Employees who perceive the expression of voice to be in-role speak up more than those who understand this as extra-role behavior (Linn Van Dyne et al., 2008).

Employees' demographics also influence voice behavior. Voice research suggests that male employees, full-time employees, and employees with higher positions and experience speak up more than their counterparts (Detert and Burris, 2007; Morrison, 2011; Tangirala and Ramanujam, 2008). Moreover, satisfaction, voice perception, commitment, and felt obligation also influence employee voice behavior at the workplace (LePine and Van Dyne, 1998; Liang et al., 2012; Tangirala and Ramanujam, 2008).

Recently, voice researchers in organization behavior have identified another type of individual-level voice barrier, which is related to individual beliefs regarding the expression of voice. This taken-for-granted beliefs acquired through social interactions with social hierarchies, influence employee voice at work. Detert and Edmondson (2011) termed these beliefs as implicit voice theories and found that these IVTs cause a major barrier to workplace voice. These individually held beliefs about speaking up are developed through interactions with social hierarchies and lead to perceptions of voice expression as a risky behavior (Detert & Edmondson, 2011). As a result, having relevant information does not always give rise to voice in the organizational hierarchy (Morrison, 2011). This research focuses on these barriers to employee voice during the implementation of Lean. The remaining section focuses on the IVTs on which we aim to research.

2.1.8. IMPLICIT VOICE BELIEFS AND BARRIERS TO EMPLOYEE VOICE

A positive climate and individual-level traits and characteristics that would tend to lead employees to speak up do not always mean that employees do, in fact, speak up. Scholars have identified the causes of this behavior as due to socially held implicit beliefs about speaking up. Proponents of implicit belief theories argue that implicit beliefs depict voice as a risky behavior. Detert and Edmondson (2011) called these implicit beliefs as IVTs and identified five types of such self-protective IVTs that create barriers to speaking up to organizational hierarchies (James R. Detert & Edmondson, 2011). According to Detert and Edmondson (2011), IVTs focus on individual-level psychosocial beliefs that prevent or negatively influence employees from speaking up and are independent of the organizational setting and are considered relatively stable and enduring in an adult's life.

The sources of implicit beliefs are the personal memories and play an important role in individuals' daily lives (Ross, 1989) and decisions regarding daily activities at work. In conditions in which employees might exercise their voice, cognitive memory (the learning process) recalls what individuals have learned throughout their life experiences, as personal recall of situations or events is part of the process whereby people pursue self-understanding (Ross, 1989). Personal recall is an active schema and a constructive process guided by individual knowledge at the time of retrieval, where schema are defined as a pattern of thought and behavior.

According to Hong et al., (1999), implicit theories guide a variety of social behavior and lead an individual to quickly decide whether to act by comparing the held beliefs and the new situation. Numerous small decisions are made during day-to-day activities under the influence of implicit beliefs in the unconcious or subconcious mind (Anderson & Lindsay, 1998). During the decision-making process, implicit theories drive the individual whether to raise voice on some specific issues or remain silent (Milliken, Morrison and Hewlin, 2003). If these implicit theories relate to some form of fear of speaking up, individual become inclined to remain silent in spite of having potential information to share.

Collective and social dynamics play a critical role in developing implicit beliefs or implicit theories of speaking up (Milliken et al 2003). Moreover, shared beliefs developed "through information sharing, social cogtagious, and collective sense making" also play significant role in developing implicit beliefs of speaking up to higher authorities (Milliken et al., 2003). Proponents of this theory argue that these beliefs about the riskiness of speaking up develop throughout the lifespan of individuals through social interactions with parents, teachers, social leaders, and other direct and indirect means (Abelson, 1979; Buss, 2009; Detert & Edmondson, 2011). For example, day-to-day interactions with parents create general expectations of how their children behave with their seniors in the social heireachy. Through these regular interactions with parents, children develop implicit beliefs that shape their behavior

of speaking up to higher members in the social hierarchy, which later transfers to organizational authority at workplace (Detert & Edmondson, 2011). These schemas are so deeply embedded in the individual mind that the individual does not generally consider any alternative of these beliefs (Morrison 2014). The development of beliefs and behavior is not identical across individuals, societies, and cultures (Buss, 2009). As a result, the human mental structure around social hierarchy varies dramatically due to the strength and content of human beliefs (Detert & Edmondson, 2011).

The first IVT is “presumed target identification,” according to which managers understand employee voice as criticism and receive it negatively. This IVT proposes that it is risky to suggest any improvement or any change or to challenge the status quo of any process or routine that is fixed by the manager, because the manager may take it as a challenge to his judgment or ability to manage. This IVT suggest that managers do not like suggestions intended to improve processes or situations that they designed and for which they are responsible. Any proposal would be disparaging to them and lead to annoyance, which may have negative implications to the employees who proposed the change. Due to this belief, subordinate employees are afraid to suggest improvement.

The second IVT is “need for solid data or solutions to speak up.” According to this IVT, the employee should have solid data and complete knowledge before raising their voice. This IVT suggests that one should be completely familiar with an issue and know the advantages and disadvantages of any solution before introducing it to their supervisor or manager. This would allow them to address the questions and criticisms of the supervisor. This implicit voice belief discourages employees from raising issues about which they do not have enough knowledge.

The third IVT is "don't bypass the boss upward," with the implication that bypassing a direct supervisor to speak up to higher management is disloyal to the supervisor. If they raise issue before the supervisor in front of their boss, the supervisor may be placed in a bad situation, with the boss possibly thinking that supervisor does not take care of their subordinate. The fourth IVT is “don’t embarrass the boss in public,” according to which supervisors do not like to hear bad news and that bad news or challenges to the situation should not be brought up to the supervisor in front of others. Doing so could cause a loss of face to the supervisor and irritate them. This type of belief restricts employee to express their concerns.

Finally, the fifth IVT is called "fear of negative career consequences to voice." This IVT suggests that supervisors have the authority to rate their subordinates. If the latter irritate their supervisor by challenging their process or routine, they may take revenge at any time by evaluating the employee negatively. This belief creates a barrier to employee voice at the workplace.

According to Detert and Edmondson (2011), the human mental structure around social hierarchy varies due to the strength and content of human beliefs. Detert and Edmondson identified these IVTs where voice was seemed to be extra-role in nature in an organizational-behavioral perspective with a sample of highly educated and highly skilled employees in a high-tech organization and in a society with low power distance. The present study, by contrast, is carried out in an operation-management perspective in which voice is deemed to have an in-role component with low-skilled and poorly educated shop-floor-level employees in garment industries in a society with high power distance. Therefore, the purpose of this research is to extend the understanding of the influence of IVTs in different contexts and work situations.

CHAPTER 3. RESEARCH METHODOLOGY

3.1. METHODOLOGY

This PhD study was conducted as part of a broad project entitled "Productivity and occupational health and safety in the garment industry in Bangladesh (POHS-BD)," funded by DANIDA in collaboration with the Aalborg University of Denmark and the Ahsanullah University of Science and Technology of Bangladesh. The objective of this project was "Sustainable co-development between productivity and occupational health and safety." To achieve this objective, the project introduced a Lean production system to selected RMG factories according to an intervention-based action research methodology.

The three-year POHS-BD project comprised three phases, namely, (i) the preparatory phase, (ii) the intervention phase, and (iii) the follow-up phase. In the first phase, 50 RMG factories of different sizes (large-where numbers of employees are more than 2,000; medium-between 500 and 2,000 employees; and small-employees fewer than 500) and in different locations were visited for baseline study by three research groups, and baseline data was collected by interviewing primarily human resource and compliance manager, quality manager, and production manager and observing at least one production line to assess the maturity level of RMG factories in terms of productivity and OHS.

Interventions were carried out in 12 RMG factories: four factories for each of three research groups during the intervention phase of the project. Several Lean production tools, such as value stream mapping (VSM), 5S housekeeping, time and motion study, quick changeover, and continuous improvements (kaizen) were applied during the interventions. Several motivational and awareness development training sessions were held regarding employee voice and participation, and leadership and commitment were imparted during the intervention phase. Based on the action research cycle of Susman and Evered (1978), we carried out our intervention in the factories to implement Lean. We planned and designed our Lean intervention, implemented these interventions, checked the results, and adjusted for further application. The intervention was implemented through a "Learning by Doing" approach, and data was collected before, during, and after the intervention.

Within the objective and methodology of the POHS-BD Project, I, in consultation with my supervisor, selected research methods and data collection approaches to achieve the individual PhD research objective. Therefore, the individual objective of this PhD study, as mentioned earlier, is to generate in-depth knowledge on employee

voice and its barriers during the implementation of Lean in the selected RMG factories in Bangladesh. To achieve this individual objective, the research methods are as follows.

3.2. RESEARCH METHODS FOR THE INDIVIDUAL PHD

Based on the POSH-BD research methodology, this PhD research draws on data collected through intervention-based action research integrated with case study research strategy in four RMG factories following a mixed-methods data collection approach. As a mixed-methods study, this study uses multiple research strategies to produce a coherent research design with the intention of answering the research questions to achieve the objective of the research. As a research strategy, this methodological choice links the research philosophy to the plan of answering the research questions (Saunders, Lewis, & Thornhill, 2016).

As mentioned, we followed Susman and Evered (1978) action research model to implement Lean in the factories via five steps of that model (diagnosing, action planning, action taking, evaluating, and specifying learning). The Lean teams of the selected factories, in collaboration with the POHS-BD research team (including me), identified bottlenecks and problems, designed tool, and devised techniques to solve them and improve the situation, implement tools, observe the result and evaluate and adjust the improvement. In this way, Lean intervention contributes to incremental improvement. Action research is closely linked to interventions and is characterized as research *in* action rather than research *about* action (Coughlan & Coghlan, 2002), addressing and solving real organizational problems. In action research, the distinction between subject and object that characterizes more conventional research is dissolved, and the researcher becomes part of the organization, while the organizational members become integrated as co-creators in the research design (Coghlan, David Brannick, 2005), because in-action research researchers and organizational members must work together to design and implement interventions.

Driven by the philosophy of change (Eden and Huxham, 1996; Lewin, 1946; Saunders et al., 2008), action research grants privileged access to real change-decisions, as opposed to abstract decisions. This privileged access is pertinent to research such as that conducted in this paper, which focuses on the influence of management actions and behaviors on employees' prosocial voice behaviors and team performance. The close collaboration entailed in action research, including access to company data, internal documents, and continuous interactions among employees at different levels in the company, ensures highly reliable and valid data (Voss, Tsikriktsis, & Frohlich, 2002). Close company collaboration is also a well-established practice in Lean research (Voss et al., 2002), because Lean research must change work organizations, for which management commitment and support is necessary. To collaborate and develop a trust relationship with the factory management and with the employees at different levels, we made, on average, 30 visits to each factory, each lasting four to

eight hours. Thus, a total of (30 visits x 6 average hours per visit) = 180 minimum hours in each factory, and approximately total (180 minimum hours x 4 factories)=720 minimum hours visits during our intervention. This gave us an opportunity to build a relationship of mutual trust and respect with the managers and workers of the factories, which was very important in order to produce high-quality data.

As an integrated part of this action research, I relied on in-depth case studies to gain insights into the problem. A case study is a research strategy designed for an in-depth inquiry of a topic, event, or phenomenon in a real-life setting (Yin, 2014). In a case study, a case may be a person or group of people, an organization or event, a change process, or another representative of a phenomenon. A case study is suitable to understand the social situation and implications for action (Yin, 2014). Case study research is contemporary and asks questions of why and how, and using this approach, researchers do not have control over issues. In our case, we researched employee voice and its barriers in terms of the recently identified phenomenon of IVTs. Qualitative, quantitative, and mixed-methods approaches can all be used in case study research to explore the dynamics of a case. Case study research fall within the philosophy of critical realism, as it proposes a rigorous, coherent, and high quality research that helps build and extend theory (Easton, 2010). Case studies can use both deductive and inductive theory development approaches; in this study, a deductive approach was used, because we based our research on organizational-behavioral literature, which has a strongly established empirical research foundation based that uses scales and questionnaires on voice behavior.

My PhD research is exploratory in nature, as it explores voice behavior and its challenges as experienced by employees in a different contextual situation to extend and clarify understanding of the topic. We conducted our research in a new context in which employee voice and IVTs have not been studied, and we explored the role of IVTs on employee voice in this new context, which is in line with an exploratory research method. According to Saunders et al. (2016) exploratory research is suitable to understand and clarify issues, problems, and phenomenon in a precise manner and in a new context. An exploratory study can be conducted in several ways. This study conducted in-depth interviews with employees at different levels in the RMG industry of Bangladesh under an integrated action research strategy.

To provide a richer theoretical understanding of voice behavior and its barriers, we collected both qualitative and quantitative data. Within this mixed methodology, we applied what Saunder et al. (2016) refer to as “partially integrated mixed methods” research, wherein the qualitative method, more suitable for why and how investigations, predominates over the quantitative method. In addition to qualitative data, we collected quantitative data to improve the data quality, and we used descriptive statistics to support the qualitative analysis. In our research, we follow a concurrent mixed-research methodology, as we used qualitative and quantitative methods simultaneously (Saunders et al., 2016). The research mainly focused on

human factors and behavior, including beliefs and actions related to performing responsibilities in a Lean manufacturing context. According to Boeije (2008), a qualitative research method is suitable to describe and interpret phenomena based on personal views and experiences, for example, human beliefs, emotions, and mental models. Qualitative methods are also suitable for providing in depth understanding, yet it is associated with several concerns regarding quality, including reliability, generalizability, and validity. Reliability refers to the replicability of research results. This issue can be reduced with a rigorous research design and explanation of how data are collected and analyzed. In my research, I collected rigorous data both by qualitative and quantitative approaches, sufficiently explaining the methods of data collection.

Limits on generalizability is another drawback of qualitative research due to its limited sample size, though some do not agree with this claim (see; Flyvbjerg, 2006). Generalizability refers to the extent to which findings can be applied to other settings, which is a concern in qualitative research given the small sample size. The issue of generalizability can be minimized by exploring issues in-depth with a cross-section of informants within the case or cases. Qualitative research focuses on analytical generalizability rather than statistical generalizability. Analytical generalizability refers to the identification of a causal mechanism in the cases. In my research, I analyzed my findings with sufficient causal mechanisms to, in my view, reduce the weakness in generalizability.

Another drawback is validity, which refers to the extent to which researchers can access the knowledge and experience of interviewees. This can be minimized by building trust with the informants and collecting rigorous data from various angles. In my research, I frequently visited the factories and built relationships of trust and respect with the employees at different levels, including with the informants of this research. Moreover, I incorporated a quantitative method to improve the data quality and validity.

3.3. OVERVIEW OF STUDIES

This research builds on three separate studies those address three separate but interrelated research questions. Therefore, this research methodology is designed to investigate these three research questions. The brief overview of these studies are discussed below:

3.3.1. STUDY I - IDENTIFICATION OF EMPLOYEE VOICE AND ITS PSYCHOSOCIAL BARRIERS

This study focuses on types of voice, more specifically, what types of message the voice give to its target and what challenges employee assumes in raising this voice to their supervisors or line managers. According to Morrison (2011) the voice messages

can be categorized into problem-focused, suggestion-focused and opinion-focused. This research aims to identify the type of messages the RMG workers mainly raise to their supervisors. Moreover, according to Detert and Edmondson (2011) employee faces challenges to raise their voice due to implicit voice theories (IVTs) and they identify five such types of IVTs. So, this study also aims to investigate how these IVTs influence RMG workers in raising their voice to their supervisors. Overall aims to improve the productivity and OHS in the RMG sector by removing voice barriers through implementing Lean production system. The research plans to carry out following an intervention-based action research integrated with case study research strategy in the RMG industry in Bangladesh and to collected data by a mixed methods data collection approach.

3.3.2. STUDY II - LEAN TEAM PROSOCIAL VOICE BARRIERS

Lean implementation requires team members' voice to problem-solving activities. Employee voice depends on numerous factors including contextual and individual factors. Detert and Edmondson (2011) identified implicit voice theories and argued that the IVTs are context independent and usually do not change with the contexts. Moreover, role perception influence employee voice behavior (Morrison, 1994). Therefore, this research aims to investigate how IVTs influence RMG workers' voice in relation to their work role and Lean context. Following an intervention-based action research integrated with case study, this research collected data through mixed methods data collection approach.

3.3.3. STUDY III - TOP MANAGEMENT COMMITMENT AND LEAN TEAM VOICE

The third study of this research focuses on the top management commitment and its influence on team members' prosocial voice behavior and on team performance. Reviewing available literature, this study identified six dimensions of top management commitment those include top management's communication, involvement, support, monitoring, and initiative to empower and encourage employees. Therefore, the research aims to investigate how these six dimension of top management commitment influence Lean team members' voice behavior to improve productivity and OHS performance in the RMG industry in Bangladesh following a qualitative action research integrated with case study.

3.4. INTERVENTION DESIGN

3.4.1. COMPANY SELECTION

Lean is a recent introduction to the garment industry in Bangladesh. We (the POHS-BD research team) purposefully selected four companies that were motivated, along with their global buyers, to implement pull-based Lean principles in their production set-up. Purposive sampling is suitable when the sample size is small and when researchers focus on in-depth investigation with research questions, for example, with case study research (Saunders et al., 2016). We used two selection criteria for our case factories. The first and foremost criterion was that the case companies should be willing to introduce Lean to their factories, and the second was that the buyers of these supplier factories should also be interested in introducing Lean to their supplier firms, because experience suggests that without the interest of and support from buyers, RMG factories do not commit to Lean implementation. We collaborated with a Denmark-based buyer, Bestseller. We found a pool of factories with these two criteria, among which we selected our four intervention factories following a snowball sampling method (Noy, 2008). We invited the factories to join a participatory Lean intervention, and we selected the ones that responded as our case factories. Snowball sampling method is an appropriate sampling method when a personal network structure makes it difficult to rely on random sampling (Saunders, Lewis, and Thornhill, 2016), as is the case in Bangladesh.

3.4.2. TEAM FORMATION

We requested the factory management to designate a single sewing line in each factory for our Lean intervention. By our request, factory management formed five Lean teams with three to seven multi-departmental and multi-skilled team members who had floor-level managers including supervisors in each factory, with two or three level hierarchies (i.e., supervisor, assistant manager, manager). These Lean teams were the 5S housekeeping team (for housekeeping and workplace organization), the process-improvement team, the quality-improvement team, the quick-changeover team (for style changeover), and the OHS team. We formed these teams to identify and eliminate waste and bottlenecks in their areas of work. These teams did not include any worker as a permanent team member as workers always need to remain busy with their specific sewing tasks and target, but the workers would become temporary team members when working with the problem or bottleneck that they identified. We recommended a three to five member supervisory team with relevant top management to guide and monitor team activities. Lean literature suggests that without top management monitoring and supervision, this Lean change initiative would not be possible. Whenever top management is involved in monitoring, other managers and workers become aware of their roles and responsibilities.

3.4.3. TRAINING AND DEVELOPMENT

We trained the Lean team members in basic Lean and OHS tools. We first arranged three-day-long training sessions for the nominated mid-level managers outside the factory, who later acted as coaches for other team members concerning the implementation of the Lean interventions in the designated line. We also imparted in-house training on basic Lean tools and OHS for both the team members and line workers. In addition, we carried out regular discussion and coaching programs with Lean team members and line workers during the intervention period. Moreover, we frequently discussed work-related issues with both team members and workers during our visit.

3.4.4. INTERVENTION

We designed intervention tools in collaboration with the factory management and team members by collecting baseline data separately from the designated line of each factory. Thus, the intervention incorporated both hard and soft components. The intervention of the POHS-BD project as a whole was designed for one year (January to December 2018) and divided into three phases: three months for the intervention design period, in which we, in collaboration with the factory management, designed the interventions with the collected baseline data from the designated lines; three months for the intervention implementation period, in which various Lean tools and OHS interventions were implemented; and, finally, six months for the post-intervention period, in which we observed the sustainability of interventions. As mentioned earlier, we followed Susman and Evered's (1978) action research cycle to implement Lean in the factories and conducted our Lean interventions based on the following sequences:

- Diagnosing: Lean team members, with the guidance of the POHS-BD research team, identified problems, either themselves or based on information from the line workers. Diagnosis was carried out with the help of value stream mapping (VSM), a time and motion study, a 5S audit, a quality check (defects per hundred unit), efficiency status, changeover time requirement, OHS audit, and so on. This measurement was conducted at the beginning of intervention to decide on what types of interventions were needed and continued over intervention period.

- Action planning: The Lean team decided on which tools and techniques they would use. During this phase, the team and the worker(s) in question discussed the problems, and sometimes, the team asked for suggestions for improvement from the workers.

- Action taking: Specific Lean team implemented the plan to solve the problem or realize the improvement.

- Evaluation: In this stage, the team analyzed the effect of the tool or technique that they applied.

- Specify learning: In this stage, the Lean team evaluated their activities and learning, identifying the benefits of the tool and technique and applying it to other workstations and lines.

Lean team members discussed all issues within themselves during covering all step of this cycle. They also discussed the issues with the line workers and sometimes solicited their suggestions or taught them what they learned to reduce the recurrence of the problem. The team members also discussed these with the top managers to inform them and solicit their support and guidance. My PhD research focuses on the interactions and barriers thereto among team members, between line workers and supervisors/team members, and between team members and relevant top managers, rather than on the tools and techniques of Lean and its implementation. During this intervention period, I worked closely with all Lean teams and line workers and relevant top managers and observed their activities and behaviors in relation to their voice behavior with each other.

3.5. METHODS OF DATA COLLECTION

We based our research on established theories and concepts and designed our research objective and research questions accordingly. Therefore, as mentioned earlier, we planned our data collection following a concurrent mixed-methods data collection approach whose components support and supplement each other's findings and that provides a more comprehensive response to the research questions (Saunders et al., 2016). We collected our data mainly during interventions that allowed us to gather more extensive data relating to our research queries and provided the option to compare the data. We collected data through interviews, observations, and surveys. The following section provides details on the data collection approaches.

3.5.1. INTERVIEW

As mentioned, our main approach in the mixed-methods research was a qualitative methodology. I, with the help of a research assistant, primarily collected data via in-depth interviews. A qualitative interview was suitable to answer why and how questions (Saunders et al., 2016). The in-depth interview allows the researcher to freely inquire about events, behavior, and beliefs (Saunders et al., 2016). As this research is exploratory, in-depth semi-structured interviews were appropriate to identify what is happening and understand the context (Saunders et al., 2016). In-depth interviews also help build causal relationships between the variables in an exploratory study. When we need to understand the reason behind any decision or the attitudes and opinions of the participants, in-depth interviews are suitable (Saunders et al., 2016). One problem with the in-depth interview, however, is data quality,

manifested in the interviewer and interviewee bias and in participation bias and reactivity. Whereas bias refers to the effect of the theories and values of the researchers, reactivity refers to the actual influence of a researcher, for instance, by interacting with interviewees. Interviewer behavior may create a bias such that the interviewee answers in a way that they think the interviewer expects. The interviewer's interpretation of the responses may also create bias (Saunders et al., 2016). These problems were reduced to a minimum level by establishing a relationship of trust with the managers and workers through frequent visits to the lines and engaging in frequent formal and informal meetings with them. Moreover, interviewees were given prior ideas about the research purpose and interview themes several times. These enhance the level of data quality.

During the intervention, about 142 interviews had been conducted with 115 informants at the top-management level, the middle- and floor-management level, and the worker level. We interviewed 17 top-managers, selected purposefully based on their involvement in the Lean interventions, with the dual aim of collecting information on the strategic direction of the company and ensuring top-management commitment. Mid-level managers (e.g., industrial engineers, production managers and assistant managers) were likewise purposefully selected based on their job functions (Teddlie & Yu, 2007; Tongco, 2007), and we interviewed 42 mid-level managers. A total of 44 workers and 12 line supervisors were interviewed, and several informants were interviewed multiples times. The interviews were semi-structured and each interview lasted between 15 and 60 minutes. We audio-recorded a total of 76 interviews. At the later stage of intervention, we did not record the interviews so as to gain more honest feedback, as in particular workers and some mid-level managers were hesitant about being audio-recorded. We conducted all interviews in Bangla (the native language of the participants), transcribed and translated them into English.

3.5.2. OBSERVATION

In qualitative research methods, observation is an important data collection method that helps researchers to understand peoples' actions and behavior and then changes based on situation and intervention. Data collection through observation can contribute to explaining social processes and to developing and expanding theory and conception (Saunders et al., 2016). In explaining barriers to employee voice, data collection from observation was useful to observe the employees' behavior and actions in relation to speaking up. This research thus included an element of participant observation, in which the researcher becomes a member of the group to be observed (Saunders et al., 2016). In my study, I made frequent visits to the factories and met and conversed with the floor management and workers to promote the feeling that I was one of them. During my visit, I observed individual operators in relation to their voice behavior with supervisors and managers. I also observed the voice behavior of supervisors and managers with operators, and, finally, I also observed

team meetings. In this study, I engaged in healthy collaboration with the factory management and had frequent visits and meetings with the Lean team and workers in the factory, including day-long stay in the factory, during which we discussed production, Lean implementation, and OHS activities. This created a relation of trust and respect with the team and workers of the line. As a result, I gained thorough, in-depth understanding of the social situations of the target group, which is very important for observation (Saunders et al., 2016).

The research paradigm in observational data collection methods vary from structured observation to highly unstructured participant observation, where structured observation counts the frequency of events, while unstructured observation documents actions and behaviors. For example, during my visit to the factories, when I observed any operator talking to any supervisor, I visited both parties, inquired about their discussion, and took note of them. In this study, I predominantly observed the voice behaviors of operators, mid-level managers, team members, and relevant top managers who were involved in Lean interventions. This kind of observation was unstructured. I observed whether operators shared any issues with their supervisors, what types of issues they shared, who initiated the discussions, what barriers to speaking up could be observed, and so on. I observed eight team meetings and observed team members' voice behavior (how they participated in meeting discussions) in these meetings. I also observed team members' behavior outside the meeting. I took notes of their voice behavior using field notes and recorded the observational data.

3.5.3. SURVEY

While this mixed-method research placed more importance on qualitative data collection that is, interview and observation, we also collected data using a quantitative survey. The purpose of this was to support and supplement the qualitative data collected through interviews and observation and thereby improve the data quality.

With the help of my research assistant, I conducted three surveys: two for the line workers and one for the team members. The first survey was related to the trend of line workers' voice behavior, and the second was for their voice beliefs; both were related to Study I. The first survey aimed to determine whether line workers adopted intentional voice behavior with their supervisor and when and what types of voice they raised with their supervisor. The second survey aimed to ascertain the employees' voice beliefs at the workplace when engaging in voice behavior with their supervisor and what psychosocial barriers they perceived when there was a need to speak up. The third survey was related to the voice beliefs of team members, mainly floor-level managers and executives of different departments, and this survey was related to Study II. We did not conduct any survey for Study III. The data collection methods

for the surveys are elaborated upon in the following sections, where we describe paper-based data collection techniques.

3.6. DATA COLLECTION METHODS SPECIFIC TO EACH STUDY

3.6.1. STUDY I

We followed a mixed-methods data collection approach for Study I. Based on voice literature, particularly IVTs (see, e.g., Detert and Edmondson, 2011), we designed the questionnaire for both the quantitative surveys and the qualitative interviews. We first conducted a short survey to assess the trend of voice behavior of line workers before undertaking qualitative data collection through in-depth interviews with line workers and managers. Concurrently with the interviews, we conducted the survey on IVTs.

At the beginning of the study, we (my research assistant and I) aimed to assess the trend of voice behavior of line workers with their supervisor through a short survey in each factory. Based on the baseline study of the POHS-BD project and on voice literature more broadly, we inductively designed the questionnaire. A total 92 line-workers from the four factories participated in this survey. The survey only included five close questions, ranked 1–5 on a Likert Scale (1 = Always; 5 = Never). We surveyed all line workers present and noted their answers, as not all line workers could read and write well, and this procedure was the best use of time and did not hamper the activities of the workers.

We interviewed 24 line workers on their voice behavior and beliefs. We also interviewed 8 line supervisors, 14 mid-level managers, and 8 top managers. We selected all interviewees based on their involvement with the Lean intervention in the factories. We audio-recorded 41interviews and took field notes for the remaining. In addition, we used unstructured observation for this study, observing whether line workers raised work-related issues to their supervisor and whether they suggested any solutions or improvement to the problems they identified, and whether they gave their opinion on any issue. We also observed whether supervisors sought suggestions or opinions from the line workers.

In parallel to interview, we conducted a detailed survey on IVTs. Based on psychometric questionnaire of Detert and Edmondson (2011) and Glassenberg (2012), we designed and developed a survey questionnaire on IVTs. Based on the five established IVTs, the psychometric scale was developed with 20 closed-ended questions, with each IVT being given four sub-questions on a Likert scale ranging from 1-fully agree to 5-fully disagree. The original psychometric questions were adjusted and readjusted with the changed context and situation (RMG, Lean and developing country contexts) by discussion with other researchers and factory managers. Based on the short questionnaire that we administered (described above), we finalized this survey for the RMG workers. This survey was open to all line

workers, but only those who could read and write well took part in this survey. Due to the newness and complexity of the topic of employee voice and implicit voice beliefs, we brought all participating line workers into the training room and described the questionnaire via a power point presentation. We read and explained each of the statements (survey questions) separately and asked the workers to place a tick mark in the appropriate box. This procedure was used for all four factories, and altogether, 79 workers participated.

3.6.2. STUDY II

Mixed-methods data collection was also used in Study II. We administered a survey concurrently with holding interviews, and we also relied on observations. We designed the basic interview questionnaire based on voice literature, particularly IVTs (see, e.g., Detert and Edmondson, 2011) and employee role perception (Morrison, 1994; L Van Dyne & LePine, 1998). For example, the presumed target identification IVT was addressed by asking whether team members had suggested or proposed any change or any alternative idea or solution to any problem in a team leader's proposal or suggestion. The role definition of employees in performing their job was explored by asking whether team members assigned any responsibility in teams and who raised more issues and why. We audio-recorded the interviews at the initial stage of data collection and found that some of the informants were hesitant to be audio-recorded. Later, we therefore relied predominantly on field notes. We conducted our interviews in Bangla.

We interviewed a total of 48 informants, among whom 8 were team leaders, 22 team members. Their positions ranged from floor-level managers to supervisors. We selected interviewees purposefully, based on their availability and willingness to sit for an interview. We also interviewed eight line workers and 10 relevant top managers using the same criteria. The duration of each interview ranged from 15 to 60 minutes.

We also made unstructured observations regarding the voice behavior of team members in and outside the team meetings concerning their daily activities during our visits to the factory. We observed eight team meetings in four factories and observed how team members, including the team leaders, took part in the meetings (i.e., spoke up) and the discussions, how decisions were made, who raised more issues, who offered more suggestions, and so on.

We conducted a survey on voice behavior and IVTs for the Lean team members, designing and developing the questionnaire by adjusting the psychometric scale of Detert and Edmondson (2011) and Glassenberg (2012) on IVTs. We finalized the survey questionnaire by simplifying, adjusting, and pretesting it. Each of these five IVT was presented in four ways in the psychometric scale, and each question was asked on a five-point Likert scale, from fully agree (1) to fully disagree (5). We conducted the survey with the Lean team members by distributing the questionnaire

one day and collected it on the next. 44 team members across the four factories out of the total of 67 Lean team members participated.

3.6.3. STUDY III

Only qualitative data collection methods were used in Study III: in-depth, semi-structured interviews and participant observation. We predominantly focused on interviews to collect the required information, with observation serving to support and improve the interview data quality. For this study, we considered two case factories. The basic questionnaire was designed by consulting literature on Lean and management commitment related to employee participation. We applied same intervention package to both the factories, identifying how top management engagement influences Lean team members' prosocial voice behavior in team and how it influences production and OHS factors.

We interviewed 10 members of top management from the two factories who were involved in and coordinated the Lean interventions. We audio-recorded interviews of four top managers and took field notes for the other six. We conducted interviews for 24 (13 + 11) team members from the two factories, and we interviewed six line operators from the two factories. Each interview lasted from 10 to 60 minutes.

We also collected data via participant observation. We observed top managers' actions and behavior in promoting employee prosocial voice behavior, and we observed team members' behavior in relation to these actions of top managers. Our observations came from two meetings with the supervisory team and four meetings with Lean teams for the first factory and two team meetings in the other factory. We did not make any observations for supervisory teams and their meetings for the second factory, as that factory did not have a supervisory team. We made approximately 30 visits to each factory, each time staying between four to eight hours in each factory. We also gathered data from the factory reports and records in relation to productivity and OHS.

3.7. DATA ANALYSIS

We organized our data using NVivo software and performed thematic analysis for qualitative data. As mentioned we collected qualitative data by interview and observation. Most of the interview data was audio recorded. Some of the workers and management employees disliked to be audio-recorded. Therefore, at the later stage we took field notes for recording interviews. After interview, we expanded field notes. We conducted all interviews in Bengali. At the initial stage, we transcribed these interviews into Bengali by multiple listening and reviewing sessions. The transcribed data was then translated into English. We predominantly used summary transcription

for the interview data, compressing long statements into brief ones while preserving the message (Saunders et al., 2016). This was an easy way to identify the principle themes for each interview or observation and help identify the relationships among them. At the later stage we transcribed and translated all interviews directly into English. We also expanded observation data based on the field notes and then translated into English. After transcription and translation, I organized interviews and observation data into three research streams based on our research questions and analyzed them separately creating separate files in Nvivo. Using NVivo, we arranged and presented our voluminous data, placing all transcribed and expanded data in NVivo. We also fed several audio recordings into NVivo.

For thematic analysis, we developed the theme considering the voice theory which was used as a framework of this study thus decided to follow a deductive approach. Thematic analysis is defined as the process of identifying and organizing data into patterns of meaning (Glisczinski, 2019). In a deductive approach, themes are identified based on existing theory and concepts and coding links to the themes (Glisczinski, 2019). Codes are then allocated under themes. We developed a set of codes before we began transcription based on existing theory, concepts, and our research questions and themes. We read each interview transcript separately several times and copied each statement under related codes. If a new statement was found that did not match the developed codes, we categorized it separately under new codes. We then categorized the codes based on each theme. In this way, we deductively coded all interviews and observations, examining the patterns of information in the themes by reading and reviewing the statements under each code within a theme. We then made our explanation based on the themes, extending the knowledge based on the existing theory. For example, based on the existing theory and concept, we developed the theme "commitment." From the set of codes, we identified the related codes with the theme "commitment" and incorporated them into the theme. For example, we identified a code "support" in relation to theme "commitment," and whenever we found any statement related to the code "support" in the transcripts, we copied it under the "support" code. After the coding process, we combine the related codes under the theme "commitment." We examined patterns of data in the code "support" and analyzed them in relation to "commitment," whereafter we developed an explanation based on the messages in each code within the theme "commitment" and developed our understanding of the theme commitment to contribute to the theory on which this research is based.

We analyzed quantitative data by using both SPSS and Microsoft Excel. We only used descriptive analysis for quantitative data.

CHAPTER 4. FINDINGS

4.1. FINDINGS

Employee voice in this research has been analyzed from three perspectives, which constitute three units of analysis: the individual employee (worker) level perspective, the team member (floor manager) level perspective, and the top management (factory level top management) level perspective. The first perspective of this research focuses on the messages and challenges of the prosocial voice at the worker-level; this group has less formal education and limited skills and works on the shop floor. The second perspective focuses on the influence of role definition and IVTs on Lean team members' prosocial voice behavior. Finally, the third perspective of this research focuses on how the top management influence Lean team members' prosocial voice behavior. The research was conducted in the context of the implementation of Lean in the RMG industry in Bangladesh and extends the theoretical understanding and generates knowledge by investigating three research questions in line with the above three perspectives. As mentioned earlier, the three research questions were investigated in three separate studies, presented together in this dissertation. The empirical findings of these studies are presented in the following sections.

4.2. STUDY I

Study I focused on the types or contents of voice and challenges to the voice behavior of individual shop floor workers. As mentioned earlier, the research questions for this study were as follows:

What is the content of employee voice regarding improvement of productivity and organizational health and safety in the readymade garment industry, and what are the challenges that employees experience in connection to implicit voice theories in raising their voice?

The following sections discuss the findings related to this question. Identifying the nature of voice and the psychosocial challenges to speaking up can help to improve problem-solving discussions and thus contribute to productivity and OHS performance.

4.2.1. TYPES OF PROSOCIAL VOICE

The empirical findings show that sewing machine operators (also called sewing operators, operators or line workers or simply workers in the subsequent literature) in RMG predominantly raise a problem-focused voice to the supervisors in relation to machine (e.g., needle breakdown, replacement of scissors), workstation (e.g., fixing a

fixture, change layout of table), and product quality (e.g., puckering) issues to solve bottlenecks that they identified or experienced. For example, whenever any sewing operator identified a bottleneck such as needle breakdown or uneven stiches or puckering in the sewing garment, they first tried to solve it by themselves and then shared it with their supervisor. We found that operators generally voiced their problem to their supervisor, and then the supervisor took care of it. These problem-focused voices were very routine and trivial in nature, yet contributed significantly to problem solving. The findings also suggest that employees seldom suggest solutions or improvements to the production process or quality. In most cases, when they experienced any discomfort or inconvenience with their work that they assumed would hamper production, they voiced the issue to their supervisor. For example, whenever any operator experienced any discomfort with their chair or body movement or with the process, they usually raised the issue with the supervisor with a suggestion in the form of a request to change the position of sewing materials or to realign the layout of the table. We found that some experienced operators sometimes proposed suggestions in relation to their work such as suggest replacing the needle when they experience uneven stitching in the garment. Our findings also revealed that employees rarely raised their opinion on any issue, because there is no arrangement of voice opinions and no arrangement or practice to ask opinions from operators in the RMG factory setting. The underlying motivation to speak up is that they need to work on target-based production, to which end they identified bottlenecks to their supervisor so as to not be held responsible.

4.2.2. CHALLENGES OF PROSOCIAL VOICE

We found that employees behaved differently in relation to their voice beliefs depending on the context. The findings suggest that the target-based production of RMG industry, the negotiated role of RMG employees, and the problem-solving nature of Lean work systems influence employees' IVTs and their voice behavior at workplace. We found that the first IVT, 'presumed target identification', did not have a significant influence on RMG operators in raising problem-related issues to supervisors. Moreover, employees also voiced their concerns when they felt discomfort and when this hindered their production. The underlying cause is that the RMG workers must achieve their target by the end of the day. The findings also suggest that the supervisors or line managers did not display signs of anger or other indications that they were offended when employees raised work-related concerns. This is also due to the fact that supervisors and line managers are equally responsible to reach the line target. Moreover, no single supervisor or manager is responsible for fixing the layout or process; responsibility is instead distributed. Therefore, the IVT1-'presumed target identification' had less influence on RMG workers in this context.

Similarly, we also found that the RMG workers were less influenced by the IVT requiring solid knowledge or a complete solution to raise work-related issues to supervisors. The operators work on a continuous production system, in which the

RMG workers must maintain a continuous and steady production flow. If operators lack knowledge to fix a problem and postpone action until they have full knowledge or wait for come up with a solution, production will be hampered at their end and subsequent workstations. Therefore, they voice their problem to their supervisors with the aim of solving it and lessening their responsibility; otherwise, they will be held responsible for target failure. As a result, the RMG sewing operators raised voices in relation to bottlenecks, with or without solid knowledge or a complete solution.

The fifth IVT, 'fear of negative career consequences to voice', also had a limited influence on employee voice behavior. In the RMG industry, sewing workers are assigned the responsibility to identify and voice information related to waste and bottlenecks due to the nature of the production system. As both line workers and managers work towards the same objective, namely, to achieve the target, supervisors tend to listen to and address all issues raised by the operators and do not care whether the operator knows the solution of the problem he raised. As a result, the influence of negative career consequence plays less role for raising work related issues aiming to achieve production target.

Concerning the third IVT, 'do not bypass the boss upward', and the fourth IVT, 'do not embarrass the boss in public', we found that the line operators acted in full accordance with these two IVTs. Empirical findings suggest that the line workers never thought to bypass their boss upward with a view to undermine their supervisors or to raise any issue in front of others with the aim of disparaging or embarrassing their supervisors. Moreover, the findings also suggest that there no harm if someone need to bypass the immediate supervisor due to his/her unavailability at any particular moment and urgency to share the issue.

IVTs are extremely important to consider when attempting to mobilize employee voice in problem-solving activities in implementing Lean, because the success of Lean depends on its members' problem-solving performance. The more the shop-floor workers and the team members identify, discuss, and solve bottlenecks, the more better overall performance is. Organizations should have knowledge of their employees' responses to IVTs, so that they can take initiatives to reduce the tension between IVTs and employee voice. The findings of this study help managers think of the IVTs of their employees and take measures to reduce it to a minimum level. Lean managers can thus benefit from this finding and enrich their knowledge of employee voice and how to consider it in implementing Lean management in their organization.

4.3. FINDINGS OF STUDY II

The second study focuses on Lean team members' prosocial voice behavior. The research question was as follows:

What are the influences of Lean team members' role definition and implicit voice theories on prosocial voice behavior during the implementation of Lean?

The findings of this study are presented below.

4.3.1. ROLE RESPONSIBILITY AND EMPLOYEE VOICE

The findings revealed that the employee role responsibilities influence employee voice behavior during the implementation of Lean. We found that the team members with assigned specific responsibilities in the teams took an active part in problem-solving discussions and team meetings, while the employees with general responsibilities tended to remain passive during meetings. The findings suggest that this is due to the fact that employees with specific responsibilities perceive problem-solving voice expression as part of their in-role responsibilities, which require them to contribute to problem-solving discussion. This group was also found to propose and suggest solutions and improvements in team meetings. However, the team members with general responsibilities considered voice as part of their extra-role responsibilities and contributed less to problem-solving activities. We found that employees with more relevant work experience were assigned specific responsibilities in the teams, while those with less related work experience were assigned general responsibilities. Therefore, the team members with specific responsibilities could easily identify bottlenecks, share concerns about bottlenecks and other issues in team meetings, and contribute more to problem-solving discussions.

4.3.2. INFLUENCE OF ROLE RESPONSIBILITY ON EMPLOYEE VOICE BELIEFS AND IVTS

The findings confirmed that role definition influences employee voice beliefs, represented by IVTs. We found that the team members, particularly those with specific responsibilities, frequently raised work-related issues in the team without fearing the boss's target identification' (first IVT). The underlying cause was that the teams were assigned responsibilities to identify and solve bottlenecks, and improve productivity. Therefore, they had to raise voice about the bottlenecks to solve it and improve the performance of the line. Otherwise they may be held responsible for poor performance. Findings suggest that the tram members with specific responsibilities, contribute more in problem solving with their ideas and suggestions than that of team members with general responsibilities. This is due to the fact that the team members with specific responsibilities perceive their role as in-role and act accordingly. As a result the team members mainly with problem solving responsibilities raise their voice without considering who set up the process or who were responsible for the process. Yet, the findings also suggest that when the team leader proposed any suggestion or solution to a bottleneck, the other team members generally did not raise any alternative proposals or suggestions. Regardless of role in the teams, team members refrained from opposing the proposal of their team leader. This trend was more acute when the

team leaders were more experienced with relevant knowledge as they were assumed had enough authority on the issues.

'The need for solid knowledge or a complete solution' was also influenced by the team members' role perception. Our findings revealed that the team members with both specific and general responsibilities usually shared the problems they identified with the team, with or without solid knowledge or a complete solution, in order for the team to develop a solution. The findings also revealed that the team members with specific responsibilities typically considered their voices to be part of their responsibilities and routinely identified bottlenecks and tried to solve them and shared them with their team without having a complete solution. They took part in problem solving and tended, when prompted by others, to voice a suitable suggestion. The team members with general responsibilities found their voice to be an extra-role responsibility and contributed less to problem-solving activities and raised or suggested fewer solutions or improvements. Our findings suggest that team members with general responsibilities, who perceived work-related voice as extra-role, were more influenced by this IVT, thinking that they needed to explain their proposal or suggestion and play less of a role in the team.

The third and fourth IVTs, 'do not bypass the boss upward' and 'do not embarrass the boss in public', were less relevant during teamwork, because the team functions as a single entity and team members identify, raise, discuss, and solve issues together as part of their shared responsibility. Therefore, there was no possibility of bypassing the boss upward or to embarrassing the boss in public, because problems were not shared outside the team. However, the findings revealed that if team members needed to share their issues with other bosses outside the team or to present issues in other meetings, they informed their team leaders before discussing the issues to others.

Concerning the fifth IVT, 'fear of negative career consequences to voice', the findings suggest that this IVT has little influence on team members. Findings revealed that due to the problem-solving characteristics of Lean team, the team members including the team leader had to identify and share issues in teams and got solutions to improve the situation. This type of work responsibility bring the teams members including team leader together to improve performance by discussing all issues by themselves that eliminates the fear of negative evaluation.

4.4. FINDINGS OF STUDY III

The third question of this study focuses on the top management commitment and its influence on team members' prosocial voice behavior and on team performance. Six dimensions of top management commitment were identified from the literature, namely, top management's communication, involvement, support, monitoring, and initiative to empower and encourage employees. This research investigated the influence of these dimensions on team members voice behavior and a found positive

association between top management commitment and Lean team members voice behavior. This is a comparative study between two case companies and was guided by the following research question:

How can top management commitment influence Lean team members' prosocial voice behavior during the implementation of Lean?

The findings are presented in the following sections.

4.4.1. TOP MANAGEMENT COMMITMENT AND PROSOCIAL VOICE

Our empirical findings revealed that the communication of the top management influenced team members in preparing to implement Lean and influenced their level of awareness and knowledge. Because through communication, top management display their intention and determination of the intended program that guides other managers to implement the program. Through communication, top management informed all stakeholders about the intended Lean program and their willingness to adopt and practice Lean in their factory. The information disseminated through the communication of top management acted as a source of inspiration for the employees, and they invested their time and effort in implementing and practicing Lean.

Our research findings suggest that the involvement of top management motivated and obliged team members to contribute to problem-solving activities by raising their voice in response to bottlenecks and other opportunities of improvement. Our findings also suggest that both tangible and intangible support by top management encouraged team members to invest their efforts in implementing Lean. Empowering employees by training and building awareness improved their knowledge, skills, and responsibility, thus improving their self-efficacy and leading employees to contribute more to problem-solving activities. Encouraging team members by soliciting suggestions and opinions and encouraging them in group discussion promoted direct employee participation. We found multiple effects of monitoring in influencing team members' prosocial voice behavior. It promotes team members to perform their stipulated responsibilities of problem solving by voicing work-related issues, problems, solutions, and suggestions for improvement in team meetings.

Comparing the two case factories, the findings revealed that when top management lacked commitment, Lean team members received less positive influence, resulting in less general participation in Lean activities. By contrast, when top management demonstrated commitment through visible communication, involvement, support, empowerment and encouraging initiatives, and monitoring, Lean team members were influenced to contribute more to problem-solving activities with their ideas and suggestions. Our findings revealed that every dimension of top management has some degree of influence on team members, influencing them expressing a prosocial voice in problem solving.

4.4.2. INFLUENCE OF TOP MANAGEMENT COMMITMENT AND PROSOCIAL VOICE ON TEAM PERFORMANCE

It is difficult to measure the direct impacts of employee voice on team performance, but the combined effect of top management commitment, introduction of Lean tools, and prosocial voice behavior was visible in this study. We found a higher level of employee participation in problem solving activities in the factory with a higher level of commitment to Lean than in the company with a lower level of commitment. The findings also revealed that between the companies, using the same Lean tools, the company with greater top management commitment showed a higher level of productivity and OHS performance than that of the factory with a lower level of commitment. These two findings confirm a positive influence of employee participation on both productivity and OHS. Our findings suggest that higher levels of participation resulted in improved team performance, manifested in the production variables in the factories, including higher efficiency, lower quality problems, and higher 5S-housekeeping scoring. Empirical findings also suggest that the factory that demonstrated higher top management commitment showed higher achievement in OHS performance, including machine safety, housekeeping, and sitting posture.

In summary, we found that local contextual forces and role responsibility influence individual employee and team members to behave differently in relation to the IVTs identified by Detert and Edmondson (2011) with the RMG employees during implementing Lean. The research findings also showed a positive relationship between the top management commitment and team members' prosocial voice behavior. This finding contributes to the voice literature and extends our knowledge and understanding of IVTs and their implications on employee voice behavior in Lean in RMG industry in the operations management perspective.

CHAPTER 5. DISCUSSIONS

5.1. DISCUSSIONS

As mentioned, the aim of the research is to contribute to the Lean literature by introducing voice and the barriers to voice expression in the implementation of Lean from the perspective of operation management. The motivation behind this research is to identify ways of improving employee prosocial voice by identifying and eliminating all types of barriers related to implicit voice beliefs and thereby improve the operational performance of the organization. In target-based production as well as in Lean problem-solving teams, shop-floor employees including workers are required to identify, share, discuss, and solve problems and to suggest solutions and improvements during the routine performance of their daily work activities. Research findings suggest that the nature of this production system in the RMG industry promotes employees to raise work-related issues in relation to production process, methods, layout, products, machines, and ergonomics and other health-related issues in relation to production to their supervisors and other line managers. We conducted three studies to investigate three research questions those comprise the part of this research dissertation. This research contributes to voice literature in operation management, represented by Lean production systems. The following sections discuss the findings of each study and outline their contributions.

5.2. STUDY I: IDENTIFICATION OF EMPLOYEE VOICE

This section discusses the types of voice that employees raise and the barriers to raising a voice due to implicit voice beliefs. Voice may focus on problems or solutions (Liang et al., 2012), and voice may be challenging or supportive (Burris, 2012) or it may be direct or indirect; or formal or informal (Dundon et al., 2004). Voice is also seen as extra-role or in-role behavior (Morrison, 1994) and related to complaints or issue-selling or whistle-blowing. Contents or messages of voice varies widely and influences the target differently (Burris, Rockmann, & Kimmons, 2017; Morrison, 2011; Morrison, 2014). The findings suggest that the voice of sewing operators in the RMG is informal, as it does not require any formal mechanism to raise a voice to supervisors. This voice is mainly problem-focused, predominantly involving operators sharing problems with their supervisors. This voice is supportive in nature, as it supports the process or system by identifying incremental problems solutions to which help improve the production flow in the RMG. It is negotiated, as supervisors and workers discuss and decide the employee's role in raising their voice when they experience problems. Finally, this voice has an in-role component, as workers are assigned some responsibility to identify and reduce waste during the implementation of Lean.

In contrast to the findings in organizational behavior that employees fear to speak up at their workplace, this research has identified that sewing operators frequently raised their voice to their supervisors, yet these voices were mainly problem focused. We propose four reasons behind the raising of problem-focused voices. First, in the RMG industry, both employees and line managers including supervisors work on target-based production and are together held accountable for any failure. Therefore, supervisors as well as line workers remained very cautious about production and negotiated to achieve the target. This allows line workers to share all problems that they cannot solve in relation to production to supervisors. Second, as both line workers and supervisors work to meet targets, the workers' role is negotiated by the supervisor as to identify, share, and solve bottlenecks in production. This negotiated role creates an obligation to raise a voice about work-related bottlenecks to supervisors (see,e.g. Morrison, 1994). Third, the continuous improvement philosophy of Lean production emphasizes problem-solving. In Lean production, employees are trained and given work knowledge that encourages them to identify and speak up regarding waste and bottlenecks and to discuss solutions together (e.g., Stewart et al., 2010)). Fourth, the continuous production system also encourages them to raise a problem-focused voice whenever they face a hindrance to production. Continuous production systems involve a single product being assembled in successive steps by successive operators in a line. If someone in the line fails to complete their process in time, the next operator suffers a lack of input and cannot complete their operation, which halts production. This means that line workers must solve any problem immediately after experiencing it, which leads employees to raise their concerns to their supervisors.

Our findings also suggest that line workers rarely voice suggestions and opinions. This could be due to their lack of self-efficacy and lack of confidence. The reason behind this is that the RGM sewing workers in Bangladesh are mainly rural women with limited formal education, work knowledge, or skills, and they may experience fear if they need to explain a proposal or if they make a mistake. Therefore, they seldom propose any suggestions or opinions on any issue except those relating to their discomfort and ability to work. In the case of discomfort, they mostly voice a request and suggestion for improvement. Moreover, line workers are not qualified in terms of work knowledge to voice an opinion on any issue to supervisors. The earlier research findings about women's voice is mixed. One study suggests that women are more likely to speak up to a supervisor and perceive fewer negative consequences than men (Young, 1978), whereas other studies have found that women are less likely to speak up then men (Detert & Burris, 2007; LePine & Van Dyne, 1998). Scholars have also found a positive association of job experience and employee voice (Milliken et al., 2003; Tangirala and Ramanujam, 2008).

In contrast to the findings of IVTs in organizational behavioral, the implicit voice beliefs influence employee voice differently in operation management represented by Lean. The findings suggest that this is due to the contextual and situational difference of work organization. In contrast to the propositions of implicit beliefs as less

dependent on contexts, the findings of this research revealed that the IVTs are significantly context dependent. The contexts of RMG target-based continuous production and problem-solving characteristics of Lean production had significant influence on IVTs that positively influence employee voice behavior at workplace. As a result, RMG employees speak up about work-related issues to supervisors. This contextual compulsion overrides the influence of implicit voice beliefs and employees speak up to problem solving. Therefore, the RMG workers are not restricted by the belief of 'presumed target identification'. On the other hand, the RMG workers work in a continuous production system, in which one operator depends on the previous operator for garment parts. Therefore, a particular worker cannot afford to wait for solid knowledge or a complete solution but to share work related problems to the supervisor. Moreover, both workers and supervisors in the RMG are responsible for achieving production target. This compels both the groups to discuss all work related issues to eliminate all obstacles and keep running production. Due to this, the RMG workers are less influenced by the 'fear of negative career consequence to voice' and hence share issues to their supervisors.

Yet, the findings of this research confirmed the implicit beliefs related to 'don't bypass the boss upward' and 'don't embarrass the boss in public'. The underlying cause is that the Bangladeshi workers are predominantly loyal to their seniors. Female workers are more loyal and submissive than the male workers. They respect and honor their superiors. Therefore, all IVTs did not have the same influence as argued by Detert and Edmondson (2011) in their land mark research on IVTs. This finding indicates that speaking up is perceived as psychologically safe in the RMG and Lean contexts. According to Edmondson (1999), employees feel safe when they find their supervisors or managers to be open to employee voice. Our observation is that, though the supervisor does not welcome employee voice, they listen to work-related problems and address the issue in order to reach their target.

The findings of this research concerning employee voice in operation management in the context of Lean production in the RMG industry in Bangladesh illustrated that the working environment supports employee voice specially in relation to production and OHS-related problems. The structure of target-based production facilitates a focus on problem solving to achieve the target, thereby encouraging line workers to share their problems or bottlenecks or discomfort with the aim of solving them to continue production. The working environment is such that the supervisors allow employee voice concerning work-related problems, with or without solutions. This helps encourage line workers to speak up. The findings also illustrated the characteristics of line workers that served as barriers to them speaking up with suggestions or voicing opinions. Due to the RMG work context and Lean production system, employees behave differently in terms of their voice behavior as compare to the voice behavior in organizational behavior context. Therefore, the findings of this research suggest that the influence of IVTs are significantly different as identified by Detert and

Edmondson (2011) due to the contextual and situational differences of the two researches.

5.3. STUDY II: ROLE PERCEPTION AND PSYCHOSOCIAL BARRIERS IN THE LEAN TEAM

This study focused on team member behavior in the Lean team. In the problem-solving team, different members were assigned different responsibilities. Some team members were assigned specific responsibilities to identify, discuss, and solve problems in the interest of continuous improvement, making voice part of their in-role responsibilities. In organizational-behavioral literature, voice is defined as discretionary and extra-role behavior (Detert & Edmondson, 2011; Detert & Burris, 2007; Morrison, 2011; Morrison, 2014). According to this view, individuals are free to choose whether to speak up in any situation (Morrison, 2011). This behavior is not binding for them and is not included in their formal job responsibilities. In our study, we propose that the voice of RMG sewing operators is negotiated and more in-role in nature, because in target-based production, both employees and supervisors in the RMG industry need to interact frequently to solve bottlenecks and negotiate to achieve the objective. This encourages employees to share information in relation to work-related problems that may prevent the production target from being realized. According to Morrison (1994), if employees and supervisors frequently interact with each other, their work roles are more precisely defined. This negotiated nature of the work role may give rise the perception of voice behavior as in-role.

Moreover, Lean management places importance on problem-solving activities that require information sharing in relation to work-related problems, suggestions for solutions, and opportunities of improvement (Forza, 1996; J.P Womack et al., 1990). Therefore, in a Lean work system, employees at different levels, including Lean team members, are assigned specific responsibilities to identify, share, and solve bottlenecks and suggest improvements. In this system, employees perceive that sharing work-related information, suggesting improvements, and raising opinions are part of their in-role responsibilities. According to Morrison (1994), role perception influences role responsibility and classifies behavior as in-role or extra-role.

Similarly, in Lean teams, members are assigned problem-solving responsibilities and thus perceive raising their voice as part of their in-role responsibility and feel obligated to speak up during team meeting. Therefore, the influence of IVTs on employee voice, identified by Detert and Edmondson (2011), was different in the case of Lean team members' voice. The team leader does not design and is not responsible for any layout, process, or system or routine. Therefore, in this context, the IVT of

presumed target identification was not directly relevant. However, team members must raise work-related issues in team and can find themselves needing to challenge proposals, voice alternative proposals, or supplement proposals. However, this research found that the influence of presumed target identification was limited in either context. The team works as a single entity, sharing, discussing, and solving problems together with a minimum of hierarchy. Though there is limited influence of presumed target identification in team, yet team members seldom disagree with the team leader's proposal. The need for solid knowledge or a complete solution was also not a factor here, due to the problem-solving nature of the team's responsibilities. It is better if the identifier has complete knowledge, but this not mandatory in order to raise the issue in the team, because the team as a whole is responsible for solving problems and improving the situation. Findings also suggest that addressing problems or issues for improvement in team does not harm the careers of team members, as addressing problems is part of their responsibilities. The third and fourth IVTs, concerning bypassing or embarrassing the boss, are not very applicable to team activities, as there is no option to bypass the boss or raise an issue in public, because team members themselves discuss and decide upon solutions and improvements, which they then implement themselves.

5.4. STUDY III: TOP MANAGEMENT COMMITMENT AND EMPLOYEE PROSOCIAL VOICE BEHAVIOR

This research investigated the influence of top management commitment in influencing Lean team members' prosocial voice behavior to improve productivity and OHS performance in the RMG industry in Bangladesh. This research compares the level of top management commitment and their level of influence on prosocial voice behavior in two factories. Based on six dimensions of top management commitment, this research investigated the impact of top management and identified a positive association between top management commitment and prosocial voice behavior during Lean implementation and their positive impact on productivity and OHS performance. The findings suggest that the more the top management demonstrates their commitment, the greater the positive influence on the problem-solving activities of Lean teams and, in turn, the greater the positive influence on productivity and OHS performance in the factory.

Several studies in organizational-behavioral literature have investigated the influence of top management on employee voice and found positive association among them (see; Detert and Treviño, 2010; Dutton and Ashford, 1993; Morrison and Milliken, 2000). However, these researches on top management commitment in organizational behavior did not focus on team members' voice behavior or on Lean teams. This research aims to investigate the relationship between top management commitment and Lean team members' prosocial voice behavior. Lean scholars have affirmed the necessity of the prosocial voice of Lean team members in problem solving but did not empirically investigate how to mobilize team members' voice in the Lean team. Our

findings suggest that commitment on the part of the top management can foster prosocial voice behavior in Lean team members, leading to improved team performance during implementing Lean. This finding supports the findings of top management influence on employee voice behavior in organizational-behavioral literature. As mentioned, top management controls resources, administers employees, implements change projects, and directs the organization (Lewis, Pun, & Lalla, 2000), meaning that top management significantly influences employees working life in the organization. This influence is not direct, as they seldom interact directly with floor-level employees, but their policies, actions, and practices create shared belief among the employees. We argue that top management has the option to influence employee voice behavior, but to do so, they must demonstrate and stick to their commitment, which they can do through communication, involvement, support, monitoring, and initiative to empower and encourage Lean team members. In these ways, top management has the ability to promote a shared belief that speaking up is necessary and safe in the organization. This psychologically safe environment (Edmondson, 1999) and managerially positive attitude toward employee voice (Dutton & Ashford, 1993; Morrison & Milliken, 2000) encourage team members to contribute to problem solving by voicing work related issues. In organizational behavior, Morrison and Milliken (2000) found that top management's positive attitude toward voice creates a trickledown effect on subordinate employees that influences employees to speak up in the organization.

5.5. RESEARCH CONTRIBUTION

5.5.1. THEORETICAL CONTRIBUTION

The first theoretical contribution of this research is to conceptualize employee voice in Lean literature. This research directly addressed employee voice and the psychosocial barriers represented by IVTs, for the first time and offers an in-depth understanding of employee voice behavior and its barriers in an operations management perspective specially during the implementation of Lean. It provides insight into how shop-floor employees contribute to problem-solving activities by raising their voice during Lean implementation in the context of the RMG industry, in which both line workers and managers aim to reach a production target. The primary contribution of this research is to identify the types or content of voice and challenges to employee voice in Lean implementation in the RMG industry in Bangladesh.

Contrary to the findings on employee voice in organizational-behavioral literature, our findings suggest that shop-floor RMG workers contribute to problem identification and problem-solving activities by frequently voicing their work-related concerns to their supervisors. Our findings also identified that the RMG workers mainly raised a problem-focused voice and contributed to production flow and performance improvement. We also identified that the voice of RMG operation-level

workers was negotiated and more in-role in nature, as the workers are assigned the responsibilities of problem-solving. We also found that this continuous production system influences employees to raise their voices to their supervisors. Our findings differed in several aspects from the organizational-behavioral findings concerning the IVTs identified by Detert and Edmondson (2011). Our research suggests that the local contextual factors of the RMG work system and Lean influence implicit beliefs at the employee level. The implicit theories of presumed target identification, need for solid knowledge and a complete solution to raise a voice, and fear of negative career consequences were found to be less applicable in the problem-focused context of RGM and Lean system of production.

This research also contributes to the literature by identifying the influence of role perception and IVTs on prosocial voice behavior among Lean team members. The findings suggest that role perception influences both IVTs and employee voice behavior at the workplace and that due to role perception, RMG sewing workers consider raising their voice to be part of their in-role responsibilities. In some cases, this minimizes the influence of IVTs on team members' voice behavior in problem solving. This research also contributes to Lean literature by identifying a positive association between top management commitments on the one hand and team voice behavior and team performance on the other.

5.5.2. PRACTICAL CONTRIBUTION

The first practical implication of this research is that the Lean managers can take measures to eliminate the conditions that prevent employees from speaking up. The second practical implication is that team members can be assigned a problem-solving role to encourage them to raise, discuss, and solve work-related problems. Finally, Lean managers should take measures to overcome challenges pertaining to IVTs, and top management must display their commitment to Lean teams in order to promote prosocial voice behavior in relation to productivity and OHS. The findings of this research can help practitioners enact the necessary measures to realize the benefits of employee voice in problem-solving activities. Knowledge on IVTs also helps managers, including supervisors, take measures to reduce the influence of ingrained IVTs and hence ensure better performance.

5.6. RESEARCH LIMITATIONS

Although this research identified the underlined causal mechanism with this small, specific sample size, a larger sample size would have strengthened the study. The second limitation of this research is that we relied on purposeful sampling, which allowed us to create a sample to satisfy our research need but did not represent the total population. Another limitation is the frequent employee turnover at different levels at the floor level, which lessens the opportunities of employee voice, because the new employees are unaware of their problem-solving role. The challenges of

translating the abstract concept of employee voice and psychosocial voice barriers represented by IVTs such that they could be understood by employees was another limitation of this research.

5.7. FUTURE RESEARCH

Employee voice in Lean is a new area of research that requires further exploration. This research provided a foundation for further research into employee voice and barriers to speaking up in an operation management perspective. Because voice research is dominated by organizational behavior and industrial relations literature, though employee voice is an essential element to operation management, very limited attention has been paid to it. Future research could include a longitudinal investigation of employee voice behavior in the Lean context. This research focused on the RMG industry with only a very small sample size in a single country, so future research may investigate a cross section of industries with a reasonable sample size in different developing countries. Moreover, future research may conduct a detailed survey to collect rigorous data. Voice role perception and its influence on IVTs and on prosocial voice behavior was also a new area of research in operation management. Future research should focus further and rigorously on these issues. Top management commitment and prosocial voice are two important components for successful and sustainable Lean implementation, and this research found a positive association between the two in two RMG factories. Further research is thus recommended for rigorous an investigation in cross-factory and cross-country contexts.

CHAPTER 6. CONCLUSION

Employee voice in identifying bottlenecks, solving problems, and suggesting improvements is critical for successful and sustainable Lean implementation. This research aimed to contribute to a better understanding of this human dynamic and the challenges faced in speaking up during the implementation of Lean, which aims to improve productivity and OHS performance, taking the RGM industry in Bangladesh as a case study. Drawing data from this industry, this research makes a theoretical contribution to the field of operations management by merging insights form the organizational behavior research. The challenges posed by IVTs to mobilizing employee voice in implementing Lean was explored in this research, and the in-role and extra-role continuum of employee voice significantly influenced the effects of IVTs on employee voice at workplace. Proactive management behavior and negotiated role assignment during Lean implementation was found to override the influence of IVTs. Despite the findings in the literature regarding the long endurance of IVTs, the findings of this research revealed that local contextual factors (organizational practices, target based production, role perception, Lean production, etc.) override the influence of IVTs in some cases, leading employees to speak up. Thus, employees can make incremental contributions to problem solving if the management creates a psychologically safe environment in which to speak up.

This research attempted to identify for the first time the challenges to and opportunities of employee voice in Lean implementation and opens new research windows for scholars. Identifying the challenges and opportunities of mobilizing employee voice at the individual and group level, as well as the implications of managerial role in promoting prosocial voice, this research unfolds the importance of employee voice in implementing and sustaining Lean to the practitioners and Lean managers.

This research contributes to Lean research that has focused on soft human factors (Netland, Schloetzer, & Ferdows, 2015) and behavioral components including employee voice. This research demonstrates both the direct and indirect causes of different employee behaviors in relation to voice and its psychosocial barriers, represented by IVTs, in operational management. The findings of this research open opportunities to appropriately address employee voice and its barriers in improving operational performance under Lean manufacturing. The research results help Lean practitioners design and plan their Lean effectively for successful and sustainable implementation in manufacturing organizations.

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